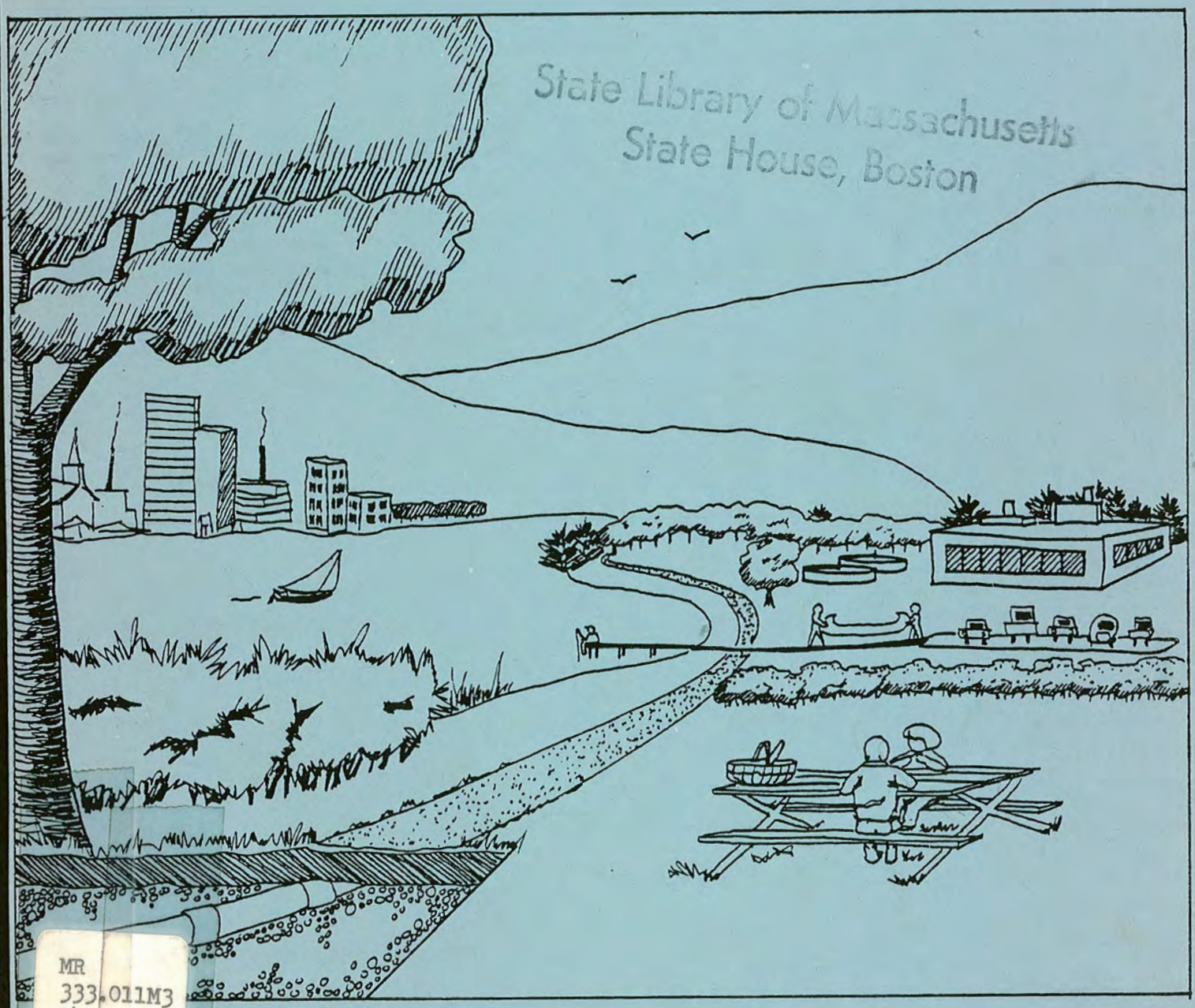
RECREATION AND OPEN SPACE OPPORTUNITIES ASSOCIATED WITH WATER CLEANUP

STATEWIDE SUMMARY

VOLUME 1



MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

RECREATION AND OPEN SPACE OPPORTUNITIES ASSOCIATED WITH WATER CLEANUP

VOLUME 1: STATE SUMMARY

(A 208 Water Quality Management Plan)

Massachusetts Department of
Environmental Quality Engineering

The preparation of this report was financed through a grant from the Environmental Protection Agency under the provisions of Section 208 of the Federal Water Pollution Control Act Amendment of 1977 (P.L. 92-500)

ANTHONY D. CORTESE, Sc. D.
Commissioner

The Commonwealth of Massachusetts

Executive Office of Environmental Affairs
Department of Environmental Quality Engineering
ONE Winter Street, Boston 02108

October 1, 1981

Dear Concerned Citizen:

The clean-up of Massachusetts' waters has made new open space and recreational opportunities possible. This same clean-up increases shoreline land values and, in many cases, has spurred development. Unfortunately, all too frequently, such development has restricted public access to these waters. However, the large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water.

Over the past two years, we have examined polluted water bodies in Massachusetts for their recreation potential. Simulataneously we looked at multiple-use opportunities at wastewater treatment facilities across the state. In areas where it was suitable, we recommended parks and open space areas along polluted shorelines scheduled for clean up: the use of sewer interceptor lines as trails; and the development of parks, boat launch ramps, tennis courts, and other recreation facilities at wastewater treatment facilities.

This is Volume 1, the summary volume of our study. Volumes 2-13 are regional reports which examine the recreation and open space opportunities at both polluted water bodies and treatment facilities (existing and proposed) for each city and town. Priority projects are identified and ranked according to regional and local needs.

This volume describes the variety of multiple use opportunities; suggests resolutions for the legal, institutional and funding issues for these projects; and reproduces the regional summaries for each region. An additional chapter summarizing activities since the inception of this project is also included. The Appendices include responses to the comments made on Volumes 2-13.

The recent reductions in funding for both wastewater treatment and recreation projects make multiple use projects more attractive to both the locality and the state. Such projects can combine funding sources and reduce overall project costs. As part of the State Water Quality Management Plan, adopted by the governor and certified by EPA, the recommendations in these reports must be considered in all facilities plans for wastewater treatment.

Facilities plans are funded through the Construction Grants Program as authorized under section 201 of the Clean Water Act. DEQE will cooperate with towns or other public bodies proposing multiple use projects on high priority wastewater treatment projects.

For more information, please contact Richard Gioiosa, Division of Water Pollution Control Construction Grants or Suzanne Kilner, Office of Planning and Program Management.

Sincerely,

Anthony D. Cortese, Sc.D.
Commissioner

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INTRODUCTION

One of the major goals of the Clean Water Act is to make all waters "fishable-swimmable" by 1983. However, once these water bodies are cleaned up, their recreational use is still often restricted by a lack of public access.

Recognizing this problem, the 1977 amendments to the federal Clean Water Act required that open space and recreation opportunities be considered as a part of water clean up activities. According to the Clean Water Act, the 208 Water Quality Management Plans must include "consideration of potential use of lands associated with treatment works and increased access to water-based recreation." This document fulfills that requirement.

For the 201 Facilities Plans for municipal wastewater treatment facilities, the Clean Water Act states that "the Administrator of EPA shall not make grants from funds authorized for any fiscal year beginning after September 30, 1978, to any state, municipality, or inter-municipal or interstate agency for the erection, building, acquisition, alteration, remodeling, improvement, or extension of treatment works unless the grant applicant has satisfactorily demonstrated to the Administrator that the applicant has analyzed the potential recreation and open space opportunities in the planning of the proposed treatment works." Furthermore, the Facilities Plans must certify that their recommendations are in compliance with the 208 Water Quality Management Plans.

This document serves as an addition to the existing 208 Water Quality Management Plan for the region. The sections are additions to the regional 208 plan and are numbered using that plan's numbering system. They may be inserted in the existing plan at the appropriate places or retained as a separate volume.

This volume also serves as one of a set which addresses recreation and open space opportunities associated with water clean-up statewide. The entire set includes the following volumes (see Figure 1):

Volume 1: Statewide Summary
Volume 2: Berkshire County, designated and non-designated areas
Volume 3: Franklin County
Volume 4: Lower Pioneer Valley
Volume 5: Montachusett, designated and non-designated areas
Volume 6: Central Massachusetts, designated and non-designated areas
Volume 7: Northern Middlesex, designated and non-designated areas
Volume 8: Merrimack Valley
Volume 9: Metropolitan Area, designated and non-designated areas (Parts A-D)
Volume 10: Old Colony, designated and non-designated areas
Volume 11: Southeastern Region
Volume 12: Cape Cod
Volume 13: Islands, designated and non-designated areas

These volumes identify recreation and open space opportunities associated with water clean-up in each region and make recommendations for action to the appropriate local, regional or state agency and, where applicable, citizen groups.

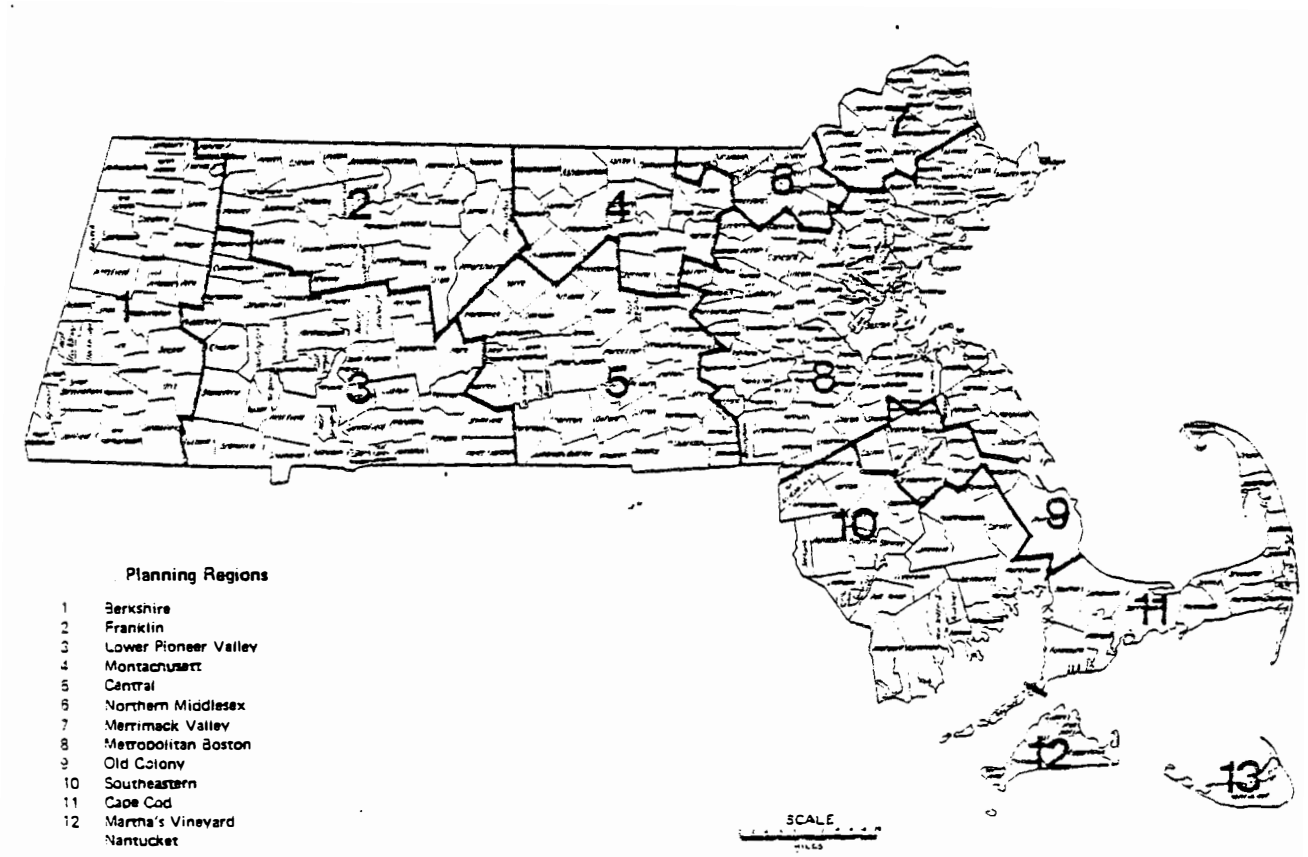


Figure 1

CHAPTER 1

Multiple-Use Opportunities

Continuous or multiple use of public facilities of all kinds is more and more common. School buildings open in the evening for adult education and community meetings, churches host nursery schools and theatre groups, and tennis courts and skating rinks are frequently combined. A newer idea is the multiple use of wastewater treatment facilities. The combined benefits of cost-savings, energy conservation and close to home recreation on a newly cleaned up water body are making these projects increasingly attractive.

The list to date of implemented projects is small but rich in imaginative combinations. The table on the next page provides a sampling of existing projects. The description of project ideas below is then followed by three case studies, one in Northborough, Massachusetts which was unsuccessful, one in Lowell, Massachusetts which didn't work in Phase I, but was adopted for later phases, and one in Naperville, Illinois which was successful.

PROJECT IDEAS

Drainage and interceptor rights-of-way can provide trails for hiking, jogging and exercise courses, cross country skiing, and snowshoeing, walkways and promenades, or bicycle paths. A fishing pier could double as the support structure for an outfall pipe. The 20-50 foot easements can also often supply needed fishing access, small boat launching areas, and swimming access. Trail corridors or a shoreline buffer strip can be used to link neighborhoods, playgrounds, parks, schools, shopping centers and conservation areas. The vegetated shoreline corridor can also serve to protect water quality by filtering pollutants from surface runoff or subsurface disposal systems.

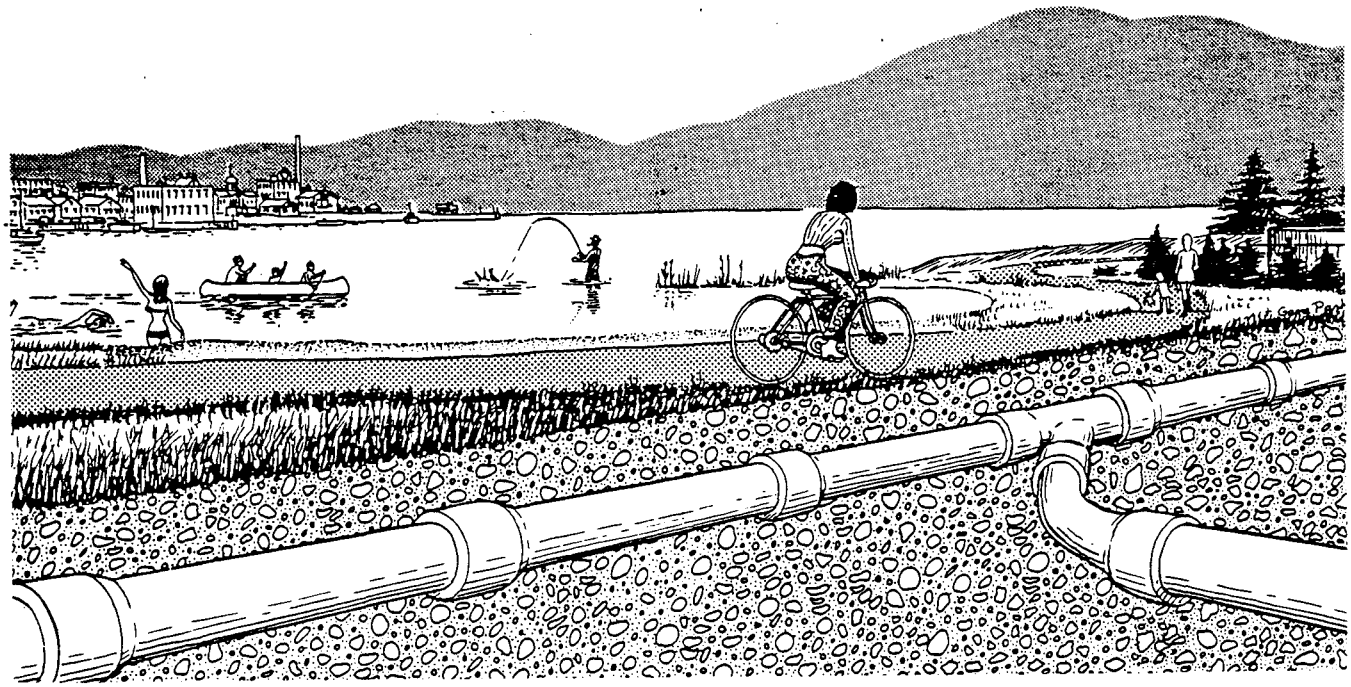


TABLE 1

EXISTING MULTIPLE USE PROJECTS

ACTIVITY TYPE	WASTEWATER TREATMENT (WWT) FACILITY TYPE	WHERE	OWNER OR FUNDING AGENCY
Approx. 10 miles of hiking/ biking trails in park.	Interceptor pipe	Washington Suburban Sanitary Commission (WSSC) Maryland	WSSC and Maryland National Capital Park & Planning Commission. PUBLIC
Bike paths, hiking trails - 13 miles	Interceptor pipe	Towpath Trail Morris County, New Jersey	PUBLIC
Bike path, hiking trails. Connects historical sites and recreational areas.	Partially on interceptor pipe	Patriots Path Whippany River, New Jersey	PUBLIC
Three mile bikeway.	Interceptor on abandoned RR service line installed under existing linear recreational facility.	Peabody, Mass.	EPA funded sewer and restored cinder bikepath as part of contract.
Tennis Courts	Roof of sludge digester	Evergreen, Colo.	Private tennis club PRIVATE
Bleachers for neighboring hockey rink	Bleachers form part of pumping station	Barrington, R.I.	
Fishing Pier	Supports treated water outfall pipe extending ½ mile out to sea	Pacifica, Calif.	EPA/Heritage and Cultural Resources Service
Park with fishing pier and sculpture garden of artifacts unearthed during construction	Land for future expansion next to WWT plant.	Tallman Island Queens, N.Y.	
Community gardens and canoe launch. Star watching facility.	Buffer land around WWT facility on DuPage River	Naperville, Ill.	Naperville Park District
Courts, swimming pool, adventure playground. Bikeway connects to Great Miami River.	Recycled WWT plant.	Westover Park Miamisburg, Ohio	
Education. Elevated walkways in plant with explanatory displays	WWT plant.	Shenandoah National Park, Virginia	National Park Service

Wastewater treatment plant sites in Massachusetts often have open spaces on the site. In some cases, the acreage was acquired for future expansion, but planned expansion may be as many as 20 years away. In other cases, it was acquired to serve as a buffer from the adjacent neighborhoods. There are numerous potential uses of this area.

For those sites adjacent to a waterway, open space on the site could be used for fishing access or boat launching ramps, either motorized or hand carried boats. These and other inland sites could also be used for playing fields, golf courses, picnic facilities, community gardens, camping grounds, neighborhood parks and playgrounds. Roofs and walls of the structure could be adapted for court games. The building itself could be designed to accommodate an environmental education center, observation decks, fishing access or parks and court games if the structure is underground. Parking facilities for many of these activities could also be provided on the site.

Names and addresses for previous chart of implemented multiple use projects:

Barrington, R.I. Pumping Station
Engineer: Camp Dresser McKee Inc.
1 Center Plaza
Boston, MA 02108

Evergreen Metropolitan District
Evergreen, Colorado 80439

The Friends of Patriots' Path
New Jersey Conservation Foundation
300 Mendham Road
Morristown, New Jersey 07960

Friends of the Towpath Trail
(Rockaway River)
Box 247
Boonton, New Jersey 07005

City of Lowell, Mass.
Office of the City Manager
Lowell, MA 01852

Miamisburg Conservancy District
Miamisburg, Ohio 45342

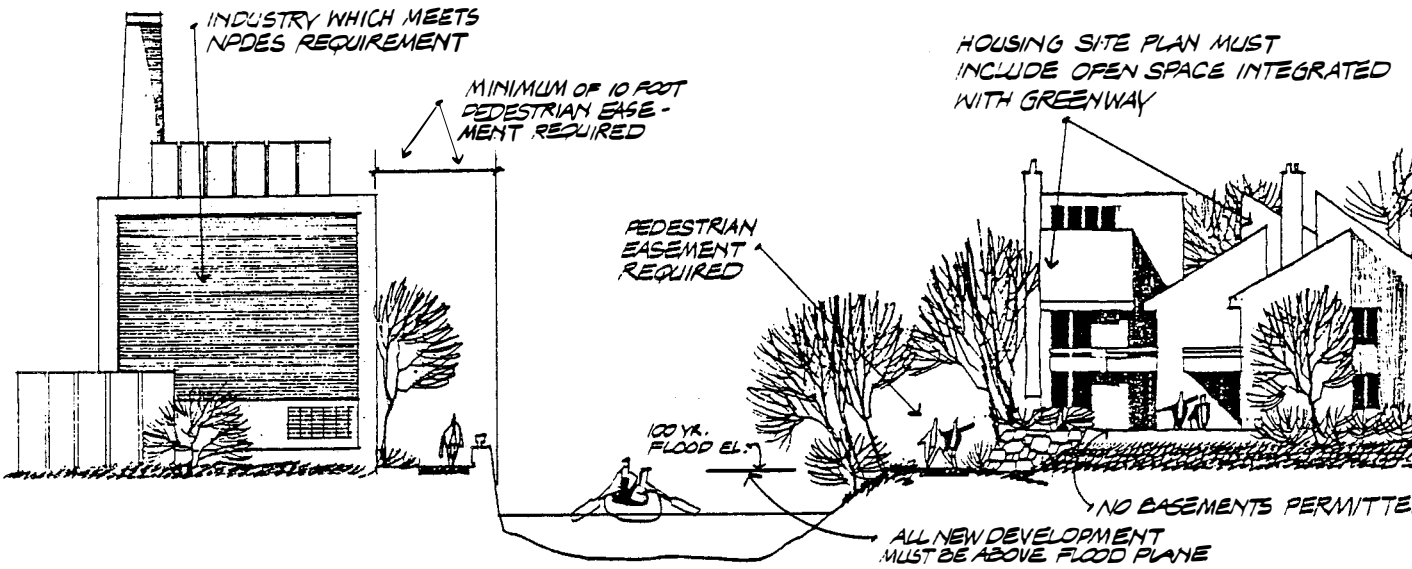
City of Naperville
305 West Jackson Avenue
Naperville, Illinois 60540

National Park Service
Shenandoah National Park
Luray, Virginia 22835

City of Peabody, Mass.
EPA Project No.: C250277-01
Engineer: Green International Affiliates
625 McGrath Highway
Boston, MA 02145

Tallman Island, Queens, New York
Engineer: Camp Dresser McKee Inc.
1 Center Plaza
Boston, MA 02108

Many of the above listed opportunities may not be appropriate for a specific site. However, other shoreline areas on lakes and rivers may be ideal sites for recreation or open space protection once the water is cleaned up. Greenways or buffer strips should be provided in urban as well as suburban and rural settings.



The 'Urban' Water Oriented Greenway Requires a Performance Control Emphasis

Source: EPA, The Public Benefits Cleaned Water: Emergin Greenway Opportunities,

Planning ahead for these areas could ensure that public enjoyment of the water, cleaned up by public funds, is not lost to private speculative development once the water quality improves.

THREE CASE STUDIES

The brief case studies that follow offer a closer look at the realities of multiple use in three communities.

Northborough, Massachusetts

In 1976, the Town of Northborough, Massachusetts missed an opportunity for multiple use of the interceptor planned along the banks of the Assabet. Early in facility planning stages, Northborough citizens requested Camp, Dresser and McKee, consulting engineers for the project, to investigate the possibility of combining a public walkway with the interceptor. Conditions seemed favorable. However, normal EPA restoration procedures were not adequate even for the minimal surfacing and landscape requirements of a walkway and the project did not score high in the HCRS priority system. It

proved impossible to secure other funding and the project dropped. Tracy and Simmons, who worked on the project, reflect as follows:

> Athough each of the groups involved in the proposal - citizens, the Commonwealth of Massachusetts, EPA and the Bureau of Recreation - like the concept, no real authorization of funding has come forth...Northborough may have been the first community in Massachusetts to pursue this type of multi-use project. In a sense, we tested the waters and found the bureaucracy not ready for the issues involved. We are still hopeful that the conflicts can be resolved among the various agencies. The Town is currently looking into the feasibility of financing the project itself over several years - accomplishing the goals on a piece-meal basis. If the sewer easement can be restored to a condition permitting future modification, then a trail may still be a reality.1

To date, the project has not been carried out.

Lowell, Massachusetts

The issue of multiple use of publicly owned wastewater treatment facilities (POTWs) was first seriously raised in Lowell in late 1976 by the Northern Middlesex Area Commission. At this time the new EPA facilities plan had been presented; in fact, Phase I along the Merrimack River was under construction. At this same time an overall bike route plan had been drawn up by the City Division of Planning and Development for implementation in stages. A route along the Merrimack was unanimously chosen by citizens, planning, and cycling groups as the backbone of the system because of its scenic beauty, its strategic location with respect to city-wide transportation, and the presence of publicly held land along its path.

Many people felt that although Phase I was nearing completion - its twenty foot flat shelf along the river was clearly visible - that taking action to attempt, belatedly, to include a bikeway would be a worthwhile step. The project had exceptional recreation value and would have been a first rate example of the multiple use concept even then being encouraged by EPA and the U.S. Department of the Interior. In fact, a conference jointly sponsored by the two agencies a year earlier (November 1975), "Water Clean-Up and the Land" had explored ways to "synchronize outdoor recreation and open space programs with the clean-up of the nation's rivers and lakes" and had offered an illustrative field trip to the Lowell Cultural Park as an outstanding example of multiple use potential.

The necessary change order would have substituted bituminous concrete for a ten foot strip of rip-rap and a fence on the water side of the construction. Although planning agencies, elected officials, city departments, and individual citizens supported the multiple use effort, it was unsuccessful for several reasons.

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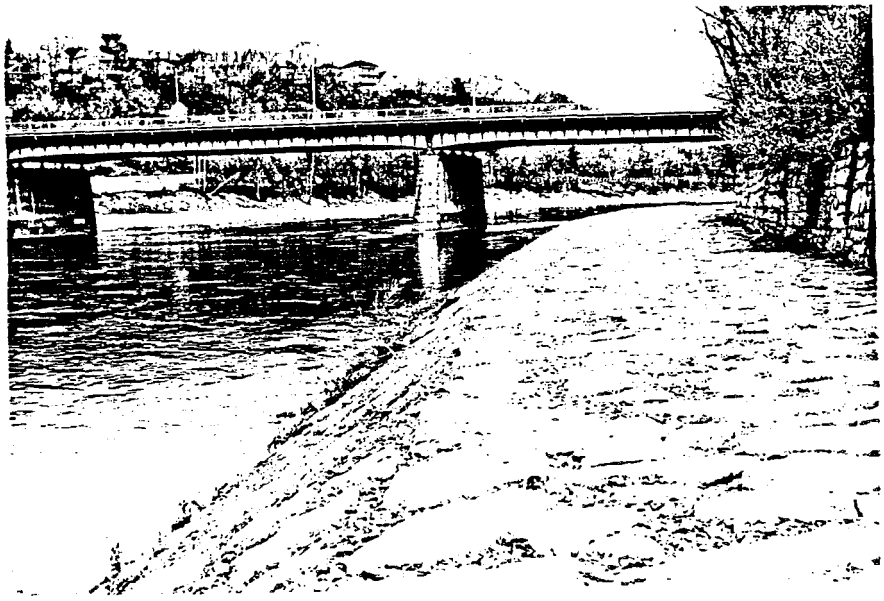
1 Jack Tracy and Cary Simmons, "Can This Sewer Project Have Recreational Benefits?", Public Works, October, 1977. Reprint.

A change order apparently could have been executed if funding for the bikeway could have been resolved. EPA will pay for multiple use as long as the combined cost is no greater than the cost for an equivalent single purpose facility. In Lowell's case, the fence proved controversial. As a necessary part of the recreational component, the fence could not be paid for by EPA. The agency, however, can fund items necessary to general safety. If sewer construction results in an 'attractive nuisance' where there was none before, EPA will bear the burden of citizen protection. The Lowell sewer seemed to fit this category. Unfortunately, documentation was not produced in time. Other funding sources were sought but did not materialize. Heritage Conservation and Recreation Service (then BOR) funds could not be used because the land under the bikeway was not to be purchased.



Lowell - Phase I Interceptor

In addition to lack of advance planning and funding difficulties, there was neighborhood opposition to the project. The Sisters of Mercy at the nearby St. John's Hospital feared noise and an increase in vandalism; these fears were shared by those in housing for the elderly located on the pipe route. Individual landowners along the route were also unconvinced. The City was concerned about liability in case of accident.

Phase I is not complete (see above). There is no bikeway on it, nor is one planned. The efforts that went into developing it were not in vain, however. Bikeways are designed into the northeast bank interceptor and are planned to be designed into the south bank and northwest bank in those sections that directly abut the river.

The Phase II bikepath is now under construction. Learning from the previous experience, the Town requested two prices for the construction bids: one with regular pavement and one with pavement suitable for a bikepath. The prices came out the same. EPA was convinced that a fence was essential for public safety with or without the bikepath and so was included as an

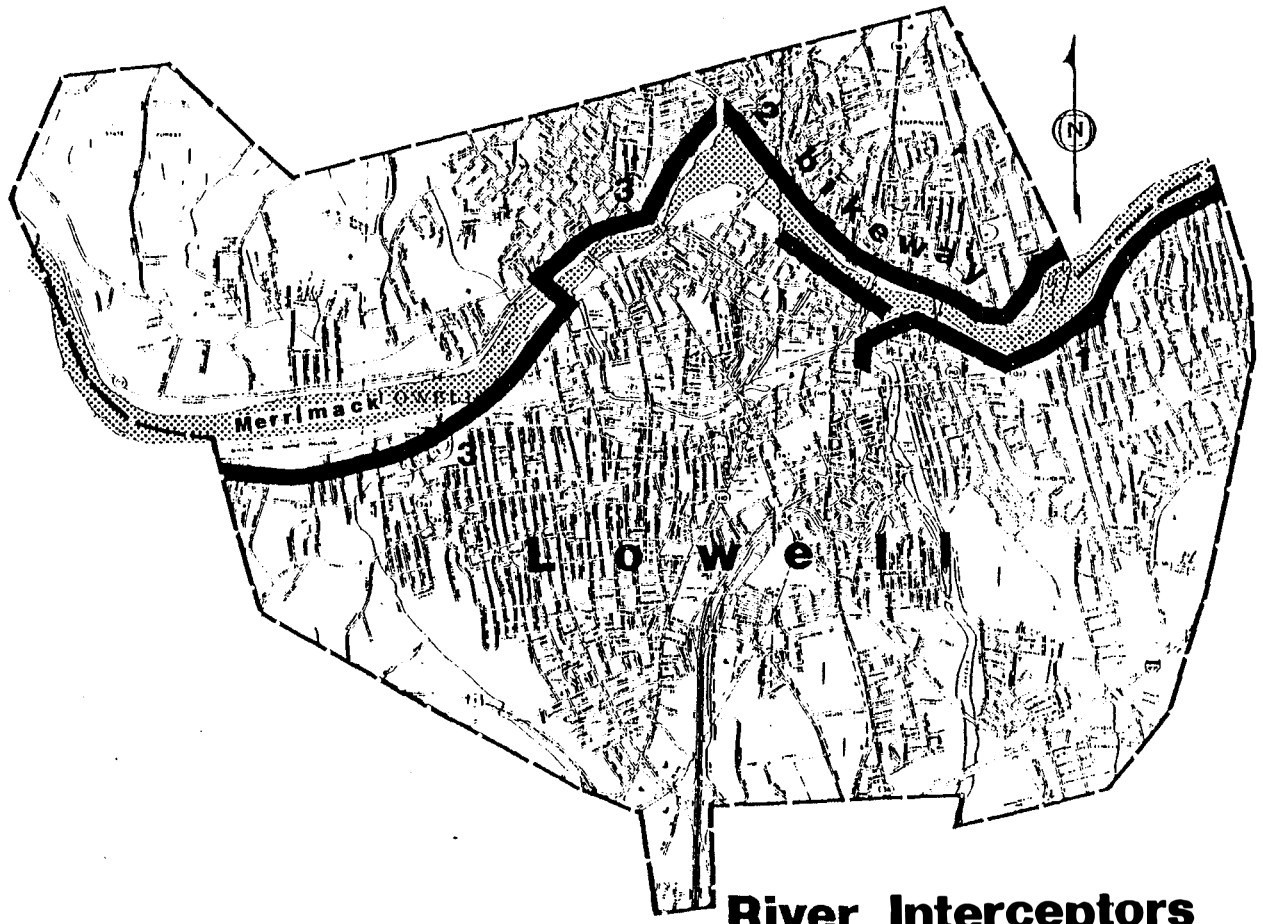


Figure 2

eligible cost. The landowners, primarily the state and the locks and canals property, were very cooperative. The project is scheduled for completion in 1980 and the Town intends to continue the bikepath along Phase III.

It should be noted that sewers are planned and implemented by agencies whose primary concern is not recreation. In order to assure that these bike paths are in fact constructed, coordination with recreation agencies is essential. However, developing multiple use facilities requires more than existing funding, more than memos of understanding between agencies and mobilization of forces in advance. While these are necessary, a vocal and organized citizenry insisting on completion of the project with its recreational component as planned is a key ingredient in project implementation.

Naperville, Illinois

Has multiple use succeeded anywhere? Indeed it has. In Naperville, Illinois, the Springbrook Regional Water Reclamation Center was dedicated in 1977. The plant can handle an average flow of 10.0 million gallons per day or a population of 75,000, including industry. It replaces six smaller plants.

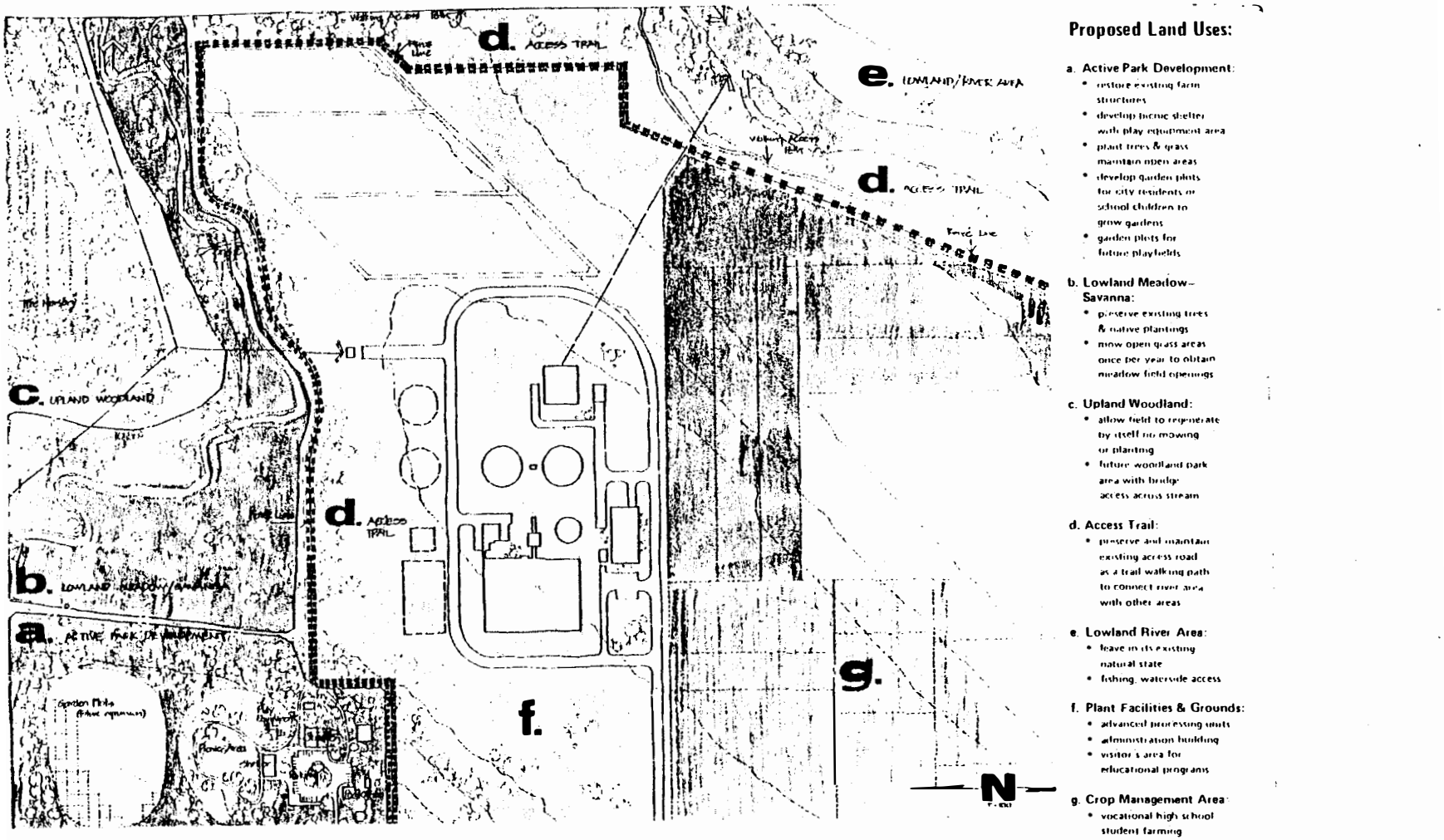
The 125 acre site was planned from the outset as a multi-use public service/education area. Plant buildings were deliberately designed to be visible and attractive. Fifteen and one half acres are leased to the Naperville Park District for community gardening; twenty-eight acres are leased to the Community School District #203 for a student farming program using digested sludges for fertilization. An Eagle Scout is constructing a canoe launch/fishing area and parking near the outfall on the DuPage River.

The Naperville High School Astronomy Club has installed an observatory. A weather station serves the Naperville Sun Newspaper and the Department of Water and Wastewater Utilities. A visitor observation deck permitting safe viewing of nearly the entire treatment process was developed with school children particularly in mind; the parking lot includes space for a standard school bus.

A brochure describing the treatment process keyed to an aerial photograph is given to each visitor. A conference room with audio-visual equipment, treatment units and instrument control systems display panels are other technical and educational facilities offered by the complex. A neighboring town uses the site as a polling place.

Future plans include a tree nursery and horticultural area, pistol shooting range, play equipment and landscaping, hiking trail system and wooden foot bridge, a water supply well and storage tank facilities, and a solar energy demonstration.

The total combined project cost was ten and one half million dollars. Funding was 55 percent EPA, 25 percent Illinois Environmental Protection Agency, and 20 percent local sewer revenue bond issue.



SPRINGBROOK REGIONAL WATER RECLAMATION CENTER
naperville - plainfield road naperville, illinois

Figure 3

CHAPTER II

LEGAL AND INSTITUTIONAL ISSUES

This chapter assesses the legal and institutional issues associated with establishing multiple use (recreation) projects in conjunction with publicly-owned wastewater treatment works. Anyone who has dealt with the multiple use issue and has attempted to develop a recreation program in connection with treatment works knows of the potential stumbling blocks that can be encountered. In some aspects, the apparent difficulties in establishing a multiple use project are not as formidable as previously anticipated. In others, there are basic problems that must be resolved before the recreational benefits of treatment works can be realized.

The following discussions present information regarding these legal and institutional issues and concerns. Legal authority, liabilities, and easements are the legal issues addressed. Holding joint easements, timing funding applications, organizing local support and identifying a management agency are the institutional issues discussed. Hopefully, this information will be useful to communities in planning and constructing multiple use projects.

LEGAL ISSUES

Applicable Legislation

The call for multiple use of publicly-owned treatment works (POTWs) can be found in Sections 201 and 208 of the Clean Water Act of 1977. This Act strengthened the provisions for public benefits associated with clean water programs.

Section 201 of the Act states that "The Administrator shall encourage waste treatment management which combines 'open space' and recreational considerations with such management." Specifically, this section states that no grant will be made for treatment works from funds authorized for any fiscal year after September 30, 1978, unless the grant applicant has satisfactorily demonstrated to the Administrator (of EPA) that the applicant has analyzed the potential recreation and open space opportunities in the planning of the proposed treatment works.

Section 208 requires "an identification of open space and recreation opportunities that can be expected to result from improved water quality including consideration of potential use of lands associated with treatment works and increased access to water based recreation."

Other existing laws which apply to multiple use opportunities include The National Environmental Policy Act which requires Environmental Impact Statements (EISs) to outline mitigation measures to minimize adverse impacts and The Fish and Wildlife Coordination Act which requires that the project include remedial measures to offset destruction or impairment of fish and wildlife habitat by the project.

With this legal basis for assessing recreation potentials, communities can now take advantage of the opportunity to obtain additional benefits from tax dollars spent on improving water quality. Why then, have these opportunities been largely ignored (at least in Massachusetts)? Part of the answer relates to the various perceived, but in many cases unfounded, legal concerns associated with establishing multiple use projects. These major legal concerns and problems are summarized in the following paragraphs.

Liabilities

The issue of liability is one that frequently is discussed whenever multiple use activities and public access are sought for a particular project. The issue takes on numerous variations depending on the type of rights secured and remuneration activities undertaken. For example, public use can be secured through such mechanisms as easements, leases, full purchase, eminent domain procedures, and gifts. Whether these mechanisms involve certain types of compensation appears to affect the liability question according to the most recent Massachusetts statutes.

In August 1977, the Massachusetts legislature repealed the so-called "Doctrine of Sovereign Immunity". Now a public body can be sued directly by the general public for negligence. Therefore, if an individual is utilizing a trail associated with a sewer interceptor that is owned and maintained by a public body, and is injured, he or she has the right to sue the public body. The suit can affect the owner of the parcel of land as well as the holder of the easement (the public body) if the easement mechanism was used to gain public access and use. If no easement was involved, the suit would simply involve the owner of the parcel of land in question.

There is, however, a second statute in the Commonwealth of Massachusetts, passed in 1972, which deals with the question of liability for private individuals or corporations permitting public use of private property.

This statute, Chapter 21 Section 17C, appears to protect the private sector from liability (in the absence of willful or wanton conduct) when the general public has been given permission to use the private property in question. If, however, the individual or corporation accepts payment for use of the land in the form of a user charge or fee, the immunity from liability no longer stands. It should be further pointed out that an individual or corporation can receive tax breaks, or even a direct cash payment for allowing public use and still not violate the right of immunity according to Chapter 21 Section 17C.

The above discussion regarding liability suggests that it may be perfectly safe for the private sector to allow the public to utilize private land and avoid being held liable as long as no wanton or reckless conduct on the part of the owner is apparent. The fact of the matter is that most homeowners and corporations are already covered by their insurance policies for liability as well as the cost of the defense in the event of a lawsuit. By allowing public access to their property, little or no additional expense for coverage should be expected as the owner would be absolved from liability according to Chapter 21. It

would be wise, nevertheless, for the landowner to attempt to get the municipality to accept any liability, especially if it is the community or a public agency that is attempting to develop the potential easement for recreational purposes. This would serve as added protection against liability for the private landowner.

Municipalities normally handle the issue of liability in one of two ways. In some cases, the community chooses to be self-insured. In this example, the community handles its own suits and, if found liable, must pay the judgment through a general fund or by raising the funds in some other fashion. The second way in which communities can handle the issue of liability is through purchasing insurance coverage for catastrophic situations. Under this coverage, a municipality may have a $100,000 deductible policy and really only be protected against multi-million dollar suits. Usually, insurance companies will get together and cooperatively assemble a joint insurance package for a community since one insurance company often does not have the financial resources to cover a potential multi-million dollar judgment against the community in question. For those municipalities that have this latter coverage, it is expected that the addition of one or two additional trails or easements added to the general insurance coverage package would probably have little impact on the municipalities' overall costs for coverage. Thus, the concern for liability may very well be overstated due to coverage which individuals or municipalities already have, as well as the fact that in Massachusetts private landholders under certain circumstances are immune from liability altogether.

Therefore, in order to "sell" the idea of multiple use where easements are likely to be negotiated, it would be important to clearly point out the protection afforded the private citizen or corporation under Chapter 21 Section 17C.

Liabilities at treatment plant sites and pumping stations are the same as with any other town-owned land. The town owning the treatment plant or pumping station assumes the liability in the event of an injury resulting from negligence. Settlement for the injury is made either from the town's insurance coverage (generally provided by a consortium of insurance companies) or from the monies contained in the town's general funds.

Easements

An easement is a legal agreement between a property owner and another party which grants the other party specified rights to all or part of the land. The agreement runs with the land and is recorded with the deed. Examples of rights granted in easements include right-of-way across the land, sewer and utility placement, flowage rights, mill rights, flood management rights, conservation restrictions. Many easements also include access for maintenance and repair.

Obtaining the necessary lands and easements for a wastewater treatment project is a local responsibility, a prerequisite for a 201 grant. The applicant's (municipality, etc.) attorney must certify to EPA that title has been obtained to the necessary lands and easements.

Although charters of public bodies establish the legal right to acquire land and easements, they differ widely on the purpose or uses for which these rights may be acquired, especially if the power of eminent domain may be evoked. A sewer district charter, for example, may enable the district to acquire easements for the construction, installation, and maintenance of a sewer, but not for other purposes such as recreation access. This right resides in the park and recreation agency. In such a case, the two public agencies would have to be alerted early in the planning and negotiation so they could cooperate in complementing each other's authority to acquire the total bundle of rights needed for a sewer easement with public access.

A multiple use easement must specify those rights necessary if the public is to enjoy the planned recreation uses as well as the rights the landowner wishes to retain as critical to his uses of his land, actual and perceived. A sample multiple use easement for a foot path over a sewer line may include the following stipulations: (1) motorized vehicles are excluded except for emergency service and security purposes, (2) the Conservation Foundation can improve and landscape the trail and the public may use the footpath, (3) the landowner has no obligation for repairing, maintaining or providing protection for the trail and agrees not to build any structures across it, (4) the multiple use easement is granted in addition to a previously granted sewer easement (see Appendix B).

Gifts of easements can be devised to benefit not only the public but also, under certain conditions, the landowners in an area. Gifts of scenic and related shoreline protection easements, for example, grant tax advantages, and at the same time, protect the landscape and river scene that the landowners collectively value highly.

In addition to sewer easements, other types of easements and rights such as flowage rights, mill rights, flood management rights, and encroachment lines may be used conjunctively to derive greater recreation, open space and scenic benefits. Possibilities should be explored for taking advantage of access established through use over the years. The public also has or could assert access and shoreline access rights. Under English Common Law, the public has the right of access to "Great Ponds", ponds of 10 acres or larger. These rights were conveyed in the colonial charter under which Maine and Massachusetts were established.

INSTITUTIONAL ISSUES

Most of the difficulties in multiple use projects stem not from legal or funding obstacles, but from institutional complications. The Department of Environmental Quality Engineering is working with many state and federal agencies involved in recreation, open space protection and water clean-up to formalize coordination for joint agency projects.

Joint Easements

In situations where a sewer commission's charter does not permit it to obtain easements for recreation or open space uses and perform associated maintenance work, then coordination with a body that has

this authority must be established from the start. In these cases, easements will have to be negotiated jointly, security and maintenance provisions coordinated, and contracts issued jointly so that construction activities can be coordinated.

Timing of Funding Applications

If the town is seeking outside funding for the recreation portion of the multiple use project, applications for the two different programs will need to proceed so that the planning, design and construction activities progress coterminously. The Facilities Plan should include preliminary site sketches and cost estimates as required by the recreation agency for future planning and design. An attempt should be made by the firm preparing the Facilities Plan for the grantee to coordinate functions in order to meet recreation application deadlines. Both the recreation and the sewer funding should be appropriated at the same town meeting, whenever possible. Table 2 identifies the critical points at which the wastewater facilities and recreation funding cycles must be coordinated.

Local Support and Organization

In order for multiple use projects to succeed a local support group will be necessary to keep the project moving and force speedy resolution of administrative conflicts. Watershed Associations, Conservation Commissions, Chambers of Commerce, Neighborhood Associations and local officials can provide the impetus for a multiple use project and the persistence to see it through. Most projects span a number of years from the planning phase to eventual construction. Multiple use projects should not increase this time frame, but will require a sustained involvement through all phases of the project, especially during the following: early consultations, initial facilities planning, submittal of recreation funding applications, project design, appraisal negotiations and site acquisition. Some of the costs of community participation in facilities planning are grant eligible.

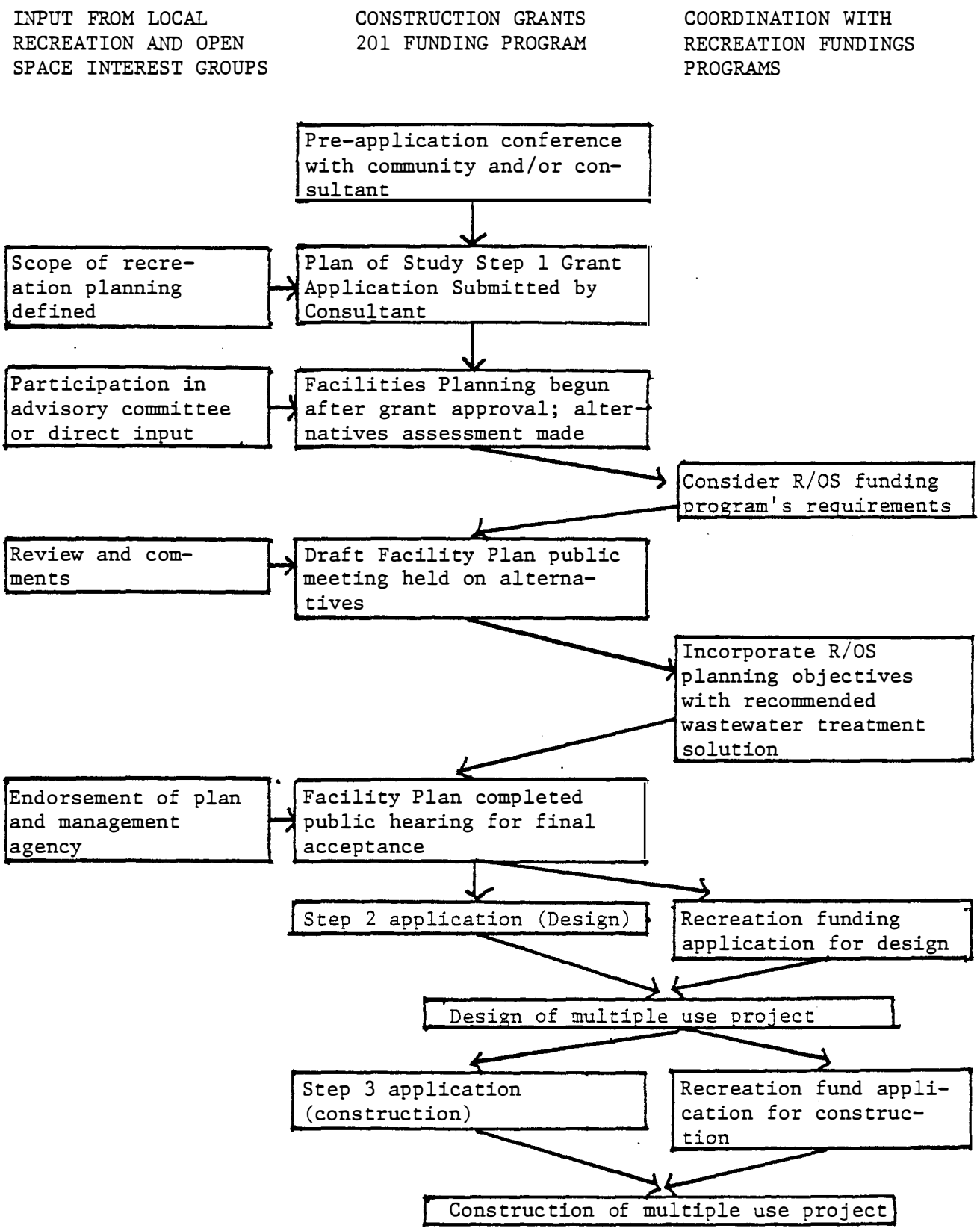
Large scale or controversial projects may require the formation of an advisory committee in order to advise on the planning effort, identify issues and assist in resolving conflicts. In the planning stage the committee may be funded as a part of the 201 Facilities Planning public participation requirement. Once the Facilities Plan is approved, it will need to seek other sources of funds.

The committee will need to stimulate public interest and maintain progressive input and momentum throughout the project in order to gain community acceptance, overcome potential or procedural problems, and see the project to fruition. A dedicated and effective core leadership will be essential.

If only one community is planning for a multiple use project, the advisory committee can be composed of representatives from the local sewer and water commission, recreation department, conservation commission, potential user groups, land owners, Chambers of Commerce, community development office, or any related branch of community government. In many cases, more than one community may be involved in a comprehensive multiple use project. A regional executive committee can be formed in

TABLE 2

TIMING AND COORDINATION FOR MULTIPLE USE PROJECTS
(Recreation/Open Space and Wastewater Treatment)



in such a way that provides for representation by elected and appointed officials, as well as land use, recreation, business and water related interests from each community which will be involved in the project. One possibility is to accomplish this through a task force or subcommittee of the regional 208 citizens' advisory group. This group should already be formed and actively participating in areawide water quality planning through a designated 208 agency. In addition, a 208 agency which is receiving planning or implementation funds can provide organization and technical assistance for the multiple use executive committee. Another possiblility would be an active group that already has a greenway plan established. Another method would be through the addition of members to form a composite committee under the auspices of an existing organization.

Executive committee members could also be selected from local environmental or conservation commissions. Conservation commissions already have a responsibility to inventory open space and natural resources. They also review proposed wastewater treatment projects. These functions are accomplished through a structure which would also enable conservation commissions to act as advisors to communities concerning multiple use opportunities. In addition, conservation commissions have the ability to acquire land through purchase and hold easements. This experience will be useful in helping to provide public access for multiple use projects.

As a major multiple use project gets underway, additional members for the executive committee can be selected from recreation departments, historical societies, outdoor clubs, or real estate organizations. More members will be needed as the various reponsibilities of the executive committee increase. These responsibilities, which can be delegated to special subcommittees, include:

(1) Assembly of available information on open space resources and recreation needs.

(2) Coordination with local and regional sewerage authorities.

(3) Propose alternative land acquisition possibilities and arrangements for liability and project maintenance.

(4) Coordination of funding, including investigation to assure all possible sources have been explored and applications submitted at the right time.

(5) Initiation of publicity and public support.

Citizen participation is essential for the success of a multiple use project. At least one active citizens' group, whose enthusiastic support will counteract opposition and general inertia of a long term project, must be organized. A special interest group, such as a bicycle club, may already exist and may easily be recruited for multiple use support. Alternatively, an entirely new group may be formed, especially for the multiple use project. This type of group can be initiated by the executive committee. Their involvement should attract the interest of other citizens and encourage local political support.

Multiple Use Agency

Ultimately, the agency that will be responsible for the completed multiple use project must be determined. It could be a branch of county government, a regional group of communities acting cooperatively, or a non-profit citizens' organization. For example, a Sanitary District could assume the management of a multiple use project for its participating communities. Sanitary districts could own property and hold easements for its wastewater treatment facilities.

Examples of multiple use programs in other states suggest that the involved communities assume responsibility for that part of the project within their jurisdiction. This is recommended to best assure long-term commitment to maintaining the multiple use facility, protecting nearby landowners, and providing adequate liability coverage. A regular program of maintenance and safety can be established as part of existing community services. Existing insurance policies will often already provide liability coverage for the community. Individual communities will ideally adopt multiple use plans and incorporate them into their master plans. This will guarantee coninued recreational consideration in planning for new wastewater treatment projects.

OTHER ISSUES

This report would be remiss if it did not mention another major factor that has held up multiple use projects affecting private lands. This factor involves the reluctance of the private sector to provide public access to private lands. There are numerous reasons for this reluctance ranging from the American ethic regarding private land ownership to concern for crime and destruction of property.

The landowners fear of potential liability due to injury to persons using the proposed multiple use site can be allayed by acquainting landowners with the legal protection afforded by Mass. G.L. Ch. 21 Section 17C (see discussion of liabilities above).

The size of the property and the density of development in the area is often a factor in the reluctance by the owner to allow passage on the land for a trail. Arrangements for an acceptable local body to manage and police the area may allay fears and, in fact, in some instances, convince concerned landowners that conditions actually might be improved. This is likely where existing partially-illicit de facto uses causes nuisances; e.g., "moonlight" trail bike incursions. The town may also want to design into the project access limitations for security measures. Limitations on the size or types of uses could increase the project acceptability to the landowner or community interest.

Chapter 3

Funding

If an applicant is considering a multiple purpose project then funding would probably be obtained from more than one source. Funds are available from water pollution control and recreation/open space agencies. Substantial savings can be made in terms of time and cost through the combined design and construction of the multiple purpose project.

Procedural requirements of individual funding sources will have to be anticipated in order to coordinate fund availability. State and federal agencies administering these funds are attempting to establish institutional procedures to facilitate projects involving multiple purposes. Local agencies or groups are vital in this process in order to provide the inertia necessary to implement the successful integration of multiple purposes.

Table 3 lists the requirements of different funding sources and situations where they may be applicable. A description of each source is also included on subsequent pages.

1. Environmental Protection Agency

The Environmental Protection Agency (EPA) is the Nation's leading water pollution control agency and has primary responsibility for administering the Federal Water Pollution Control Act Amendments of 1972. Section 201 and 208 address multiple use projects.

Section 201 of the Act authorizes the EPA to provide federal funds to local governments to cover 75% of the costs for planning, designing, and constructing publicly-owned treatment facilities. These funds are disbursed through the Massachusetts Division of Water Pollution Control which, additionally, funds 15% of eligible costs to further assist the communities. Since September 30, 1978, federal regulations require that multiple use opportunities be addressed as a part of facilities planning. Funds for design and construction of the secondary use are in general ineligible for 201 funding.

During fiscal years 1979 and 1980, EPA funded DEQE's 208 water quality staff to perform a statewide assessment of recreation and open space opportunities associated with water clean-up. The results of this study are contained in this document. The recommendations, once they are adopted regionally, will be certified by the governor and EPA Administrator. The alternative recommended in the 201 Facility Plan should then conform to the Water Quality Management Plan recommendations.

In addition to this study, 208 funds could be used to help to implement nonpoint source management resulting in enhancing, restoring or protecting recreation and open space uses. Award of these funds is made on a competitive basis.

TABLE 3

Multiple-Use Funding Sources
by

Massachusetts Department of Environmental Quality Engineering
208 Water Quality Management Program
April, 1980

STATE PROGRAMS

AGENCY	PROGRAM	FY'80 FUNDING for MA.	APPLICATION DEADLINE	FINAL DATE FUNDING DECISION MADE	PROJECT LENGTH ALLOWED (In years)	% LOCAL SHARE	REIMBURSEMENT PROGRAM	CAN OTHER FEDERAL OR STATE FUNDS BE USED AS AS A MATCH?	AGENCY CONTACT IN MASS.
Massachusetts EOEA Divs. of Conservation Services	Self-help Program	$1,684,724 for '80 $600,000 for '81 May be new bond issue	August 31	October 1	Varies	50%	Yes	Yes, LWCF for an additional 25%	Joel Lerner Div. of Conservation Services 100 Cambridge St., 21st Fl. Boston, Ma. 02202 (617) 727-1552
	Urban Self-Help Program (cities with pop. greater than 35,000).	2.5 M, 0 for '81 (may be new bond issue)	August 31	October 1	Varies	20% (not less than)	Yes	Yes, LWCF for an additional 10%.	Same as above
FEDERAL PROGRAMS									
USDI Heritage Conservation & Recreation Service	Land & Water Conservation Fund (LWCF)	7.725 M-1980 3.6 M-1981	August 31	October 1 (sometimes later)	(5 year maximum)	50%	Yes (sometimes acquisitions can be advanced)	EDA, CDBG	Same
	Historic Preservation Fund	Survey & Planning 700,000 Acquisition & Devel. 600,000	June 13, ---------- April 30	Following annual appropriation January ---------- Jan. - March	Survey & Planning 6-12 Months Acquisition & Devel. 1 year	50% minimum	Yes	Revenue Sharing CDBG Any non-federal state or local	Lee Gurney Mass. Historical Commission 294 Washington St. Boston, Ma. (617)727-8470
	Urban Park & Recreation Recovery Program	125 M (Nationwide)	3 cycles Nov., Feb., June	60-90 days from filing	No more than 3 construction seasons. Generally 1 yr. (varies)	With State match, Fed. share increases dollar for dollar 30%	Yes	State-DCA-Community Affair Grants CDBG Gen. Revenue Sharing	Mass. Dept. of Environmental Management 100 Cambridge St. Boston, Mass. 02202 (617)727-4704

TABLE 3 (CONTINUED)

FEDERAL PROGRAMS (CONTINUED)

AGENCY	PROGRAM	FY'80	APPLICATION DEADLINE	FINAL DATE FUNDING DECISION MADE	PROJECT LENGTH ALLOWED (in years)	& LOCAL SHARE	REIMBURSE-MENT PROGRAM	CAN OTHER FEDERAL OR STATE FUNDS BE USED AS A MATCH?	AGENCY CONTACT IN MASS.
HUD	Community Development Block Grants	Metro.- 14.6 M Non-Metro.- 6.75 M	3 yr. plan required or 1 yr. competitive discretionary funds.	Issued by HUD, normally once per year. October 1980	Discretionary funds normally on yearly basis.	None required	Varies	Can be used as a match for LWCF money	Sheldon Gilbert HUD 15 New Chardon St. Boston, Ma. 02202 (617)223-4184
	701 Comprehensive Plan-Planning Assistance Program	1.55 M	Varies with agency using funds from HUD	Varies	1 year	33.3 %	No	No	Same
USDA Farmer's Home Admin. (Fm HA)	Recreation Loans to Farmers	92,000 ($200,000 per loan)	Varies	Varies	Intermediate loans 1-7 yrs. long term: loans up to 40 years.	Loans with interest rate determined July 1. Loans at 5% interest	Interest rate varies periodically currently 12%	NA	Robert Pratt Chief, Farmer Programs USDA Fm HA 451 West St. Amherst, Ma 01002 (413) 253-3471)
	Resource Conservation & Development Loans (limited to Berkshire, Franklin, Dubes, Bristorl. Plymouth, Nantucket and Barnstable Counties)	Funding available but use limited as interest rates rise (upper limit $500,000)	Varies	Varies	Up to 40 yrs	Currently 7.21% interest	NA	Loans are for public & local non-profit organizations	Buen Anderson District Director PO Box 455 Sunderland Ma01375 (413) 665-2603 Berkshire & Franklin counties Richard Lavoie District Director 160 MacArthur Park Blvd. Revere Ma. 02532 (617) 754-9321 other counties
	Community Facilities loans (towns with population less than 10,000)	Funds generally always available but somewhat limited	Varies	Varies	Up to 40 yrs	5% interest on unpaid principal	NA	Loans to public or quasi-public non-profit organizations	Brian Anderson (Berkshire LPV, Franklin, Central Mass. RPA's Richard Lavoie (all other RPA's)
	Waste loans and grants (towns with population less than (10,000)	Loans generally available but grants are very limited	Varies	Varies	Up to 40 yrs	5% interest on unpaid principal	NA	Loans to public or quasi-public non-profit organizations	Same as above

TABLE 3 (CONTINUED)

FEDERAL PROGRAMS (CONTINUED)

AGENCY	PROGRAM	FY'80	APPLICATION DEADLINE	FINAL DATE FUNDING DECISION MADE	PROJECT LENGTH ALLOWED (in years)	% LOCAL SHARE	REIMBURSEMENT PROGRAM	CAN OTHER FEDERAL OR STATE FUNDS BE USED AS A MATCH?	AGENCY CONTACT IN MASS.
	Watershed Protection & Flood Prevention	Funding available, but use limited as interest rates rise (upper limit $500,000)	Varies	Varies	Up to 40 yrs.	Currently 7.21% interest	NA	Loans are for public & local non-profit organizations	Same as above
Soil Conservation Service	Berkshire Franklin Resource Conservation & Development	125,000	Varies	Varies	Essentially no limit	50% plus all O & M	NO	Loan assistance for local share	Jeffrey Anlikes RC&D Coordinator Amherst Rd. P.O. Box 408 Sunderland Ma. 01375 (413) 665-7040
	Pilgrim Area Resource Conservation & Development	125,000	Varies	Varies	Essentially no limit	50% plus all O & M	NO	Loan assistance for local share	August I. Reese RC&D Coordinator 2510 Cranberry Highway Wareham Ma. 02571 (617) 295-9202
	Watershed Protection & Flood Prevention	1.03 M	Varies	Varies	Essentially no limit	Varies depending upon purpose of the measure	NO	Yes and long term credit is also available for local share through the Fm HA	Phil Christenson Asst.State Conservationist 451 West St. Amherst, Ma. 01002 (413) 256-0441
Department of Commerce	Economic Development Administration	No budget yet	Round III of Public Works-not authorized yet			20%			William Fitzhenry E.O.A. 441 Stuart St. Boston, Ma. 02116 (617) 223-6468
	Coastal Zone Management Community Assistance Grants Program	$320,000	December	April	1 year	20%	No	State and local funds or in kind contributions	Rich Thibedeau Mass. CZM 100 Cambridge St. Boston, Ma. 02202 (617) 727-9530
	Coastal Zone Management Coastal Energy Impact Program	Loans-32M Grants-600,000	August May	Varies	Loans-up to 30 yrs. Grants-1 yr.	20%	No	State funds	John Shortsleeve Mass. CZM 100 Cambridge St. Boston, Ma. 02202 (617) 727-9530

TABLE 3 (Continued)

FEDERAL PROGRAM (CONTINUED)

AGENCY	PROGRAM	FY'80	APPLICATION DEADLINE	FINAL DATE FUNDING DECISION MADE	PROJECT LENGTH ALLOWED (in years)	% LOCAL SHARE	REIMBURSEMENT PROGRAM	CAN OTHER FEDERAL OR STATE FUNDS BE USED AS A MATCH?	AGENCY CONTACT IN MASS.
Federal Highway Administration	Pedestrian & bicycle facilities	Cumulative bonding funds; currently 3M	Varies	Varies	Varies	25% (cash or in-kind)	Yes	No	Patrick Lynch Bureau of Transportation Planning & Devel. 150 Causeway St. Boston, Ma 02114 (617) 727-5124
Department of the Treasury	General Revenue Sharing	Funding depends on community characteristics	NA	NA	Annually	None	No	Yes	Mass. Revenue Dept. 100 Cambridge St. Boston, Ma. 02202 (617) 727-4233
U.S. Army Corps of Engineers	Federal Water Project Recreation Act. (Note: if associated with Corps project	No limit	No deadline	No deadline	As contracted	50% of non-separable costs plus O. & M. (either cash or in-kind services) e.g. land)	No	CDBG, any non-federal public agency	Charles Freeman U.S. Army Corps 424 Trapelo Rd. Waltham, Ma.02154 (617) 894-2400, Ext. 347
U.S. Fish & Wildlife Service	Pittman Robertson Program Federal Aid to (Wildlife) Note: F&W State projects only) and Dingell Johnson Program Federal Aid to(Fisheries) (Note: state projects only)	Maximum amount for both programs is $700,000 but don't have enough state share.	On going	No deadline	No limit	25% supplied by state (75% federal and 25% state)	Yes 75% to state Fish and Game	State agency could transfer 100% money to State Fish & Game fund and then State Div. of Fisheries & Wildlife would build and then reimburse the 75%	Paul Mugford Mass. Div. Fisheries & Wildlife 100 Cambridge St. Boston, Ma 02202 (617) 727-3151
Department of Labor	C.E.T.A.	$174 Million	Varies with local agency	Varies with local agency	Usually 1 year	None Non-federal share waived in FY'79 and FY'80	No		John Rose Dept. of Labor, Employment & Training Administration JFK Federal Bldg. Boston, Ma. 02203 (617) 223-7380
U.S. Community Services Administration	Summer Youth Recreation Program	$135,570	April 21	30 days	June 1-Sept. 30	30-40% from approved Community Action Agencies	No		Laurence Fay Community Services Admin. JFK Federal Bldg.Boston,Ma. 02203

TABLE 3 (CONTINUED)

FEDERAL PROGRAMS (CONTINUED)

AGENCY	PROGRAM	FY'80	APPLICATION DEADLINE	FINAL DATE FUNDING DECISION MADE	PROJECT LENGTH ALLOWED (in years)	% LOCAL SHARE	REIMBURSE-MENT PROGRAM	CAN OTHER FEDERAL OR STATE FUNDS BE USED AS A MATCH?	AGENCY CON-TACT IN MASS.
Department of Health, Education & Welfare	Environmental Education	Not funded in FY'80. '81 funding unlikely	Varies	Usually 45 days after application deadline	3 years	25% in 3rd yr.	No	NA	Roland Perry Office of Education, HEW Room 2403 JFK Federal Building Boston, Mass. 02203 (617) 223-7227
	Older Americans Act (senior centers)	Available under Title 3B Varies by planning and service area	Varies, but generally no later than June 15	Not before October 1	Varies, but generally 1 year	25% in 1980 (¼ of above must be public resources)	No	Yes CDBG, General Revenue Sharing, state	Emmett Schmarsow Dept. of Elder Affairs 110 Tremont St Boston, Ma. 02108 (617) 727-7009

Under the 201 construction grants program the current EPA and Division of Water Pollution Control policy in funding multiple-purpose projects which include recreation is to fund at the level of the most cost-effective single-purpose pollution control project. Costs associated with the design and construction of the recreational components are not eligible for construction grants money. These costs have to be borne by the grantee in addition to their share of the water pollution control project.

The cost of the single-purpose pollution control project should include the cost of normal restoration of the site to near original conditions in the case of an interceptor and to aesthetically blend the site and structures into the landscape in the case of a pumping station or treatment plant. For interceptors the types of planting would differ in fields, forests, wetlands and developed areas. Special provisions are made for erosion prone river banks. Access for maintenance and barriers preventing unauthorized access are also included. For treatment plants and pump stations, normal restoration would include similar access provisions, fencing for security and a buffer zone as well as any trees or shrubbery deemed appropriate. EPA and DWPC review all plans prior to approval to ensure that site restoration is adequate.

In addition to normal site restoration under EPA's 201 program, a variety of mitigation costs have been ruled eligible project costs in Federal project history. Under the Fish and Wildlife Coordination Act, for example, a Federal project must bear the cost of acquiring and developing substitute habitat to offset that destroyed or impaired by the project. The National Environmental Policy Act also provides a statutary basis for mitigation expenditures to offset the full spectrum of potential environmental damages.

Only the Recreation and Open Space planning costs are eligible for 201 funding. Design and construction costs beyond normal site restoration are not grant eligible under steps 2 and 3. However, if a Grantee is able to incorporate a viable multiple purpose use in conjunction with the recommended treatment system's construction then funding for the recreational purpose will be eligible up to the allowable cost for restoration of the site for the wastewater system.

For example, for the interceptor system along the Merrimack River in Lowell, Massachusetts described in Chapter 1, an alternative bidding procedure was used to enhance the recreational opportunity in conjunction with the proposed wastewater system. One alternative was to entirely riprap the river bank along the interceptor. The other alternative substituted a paved surface for one half of the 20 foot wide riprap shelf and included a simple balustrade railing. Both alternatives were bid at the same price. The bikeway/walkway alternative is being built and will provide numerous recreational benefits to the City of Lowell.

Should a multiple purpose option be bid at a higher price, the cost over and above the cost of the wastewater system alternative alone will have to be borne by the affected community and/or through an available recreational grant.

To be eligible for these funds, the proposed recreation project must be part of a certified areawide water quality management plan, and must be consistent with the plan's recommended means for improving water quality.

State Funding Sources

2. Executive Office of Environmental Affairs

A. Massachusetts Self-Help Program

Administered by the Division of Conservation Services (DCS) in the State's Executive Office of Environmental Affairs, this program offers towns and cities with conservation commissions up to 50 percent reimbursement for the cost of land purchased or developed for conservation or passive outdoor recreation. HCRS's Land and Water Conservation Fund (described below) and DCS Self-Help Program may be applied together. In that case, a community may receive up to 75 percent reimbursement for the cost of purchasing land.

B. Urban Self-Help Program

Similar to the program described above, this program provides reimbursement funds for conservation and recreation projects, with an emphasis on aiding large cities. It will provide up to 80 percent reimbursement for cities with population above 35,000.

Federal Funding Programs

3. Department of the Interior Heritage Conservation and Recreation Service

The Heritage Conservation and Recreation Service is responsible for nationwide outdoor recreation planning, technical interagency coordination, and allied fuctions associated with the provision of recreation experiences. Major funding programs are the Land and Water Conservation Fund, Urban Park and Recreation Recovery Program, and Historic Preservation Fund.

A. Land and Water Conservation Fund (LWCF)

LWCF provides grants of up to 50 percent for the planning, acquisition, and development of public outdoor recreation areas and facilities. Available funds are apportioned to each state on the basis of relative population and other factors. Specific projects approved for funding are usually identified at the State level. An approved Statewide Comprehensive Outdoor Recreation Plan (SCORP) is required for state eligibility.

An unfortunate aspect of LWCF is that it is a reimbursable grant program requiring local communities to provide the initial funding for acquisition and/or development projects (unless a land donation is involved). This has made the pursuit of multiple use difficult for many communities.

B. Historic Preservation Fund

Under the Historic Preservation Act (Public Law 89-665) as amended, 50 percent matching grants are available to states for preparing comprehensive statewide historic surveys and plans, and for the acquisition, preservation and development (by state and local governments) of districts, sites, buildings, structures and objects significant in American history, architecture, archeology, and culture at the national, state, and local levels.

C. Urban Park and Recreation Recovery Program

The National Parks and Recreation Act of 1978 authorizes funds for rehabilitation of existing public park and recreation sites and facilities in urban areas. The program authorizes a 70/30 federal/local grants program for such purposes. Innovative projects are encouraged and special funding is provided for this purpose. The program is intended to compliment the Land and Water Conservation Fund (LWCF) and other potential sources of federal and state aid.

4. Department of Housing and Urban Development (HUD)

The Office of Community Planning and Development is responsible for the Community Development Block Grant Assistance and Comprehensive Planning Assistance programs. It is also responsible for activities concerning project review, relocation, enhancement of environmental quality, urban design, rehabilitation loans and grants, growth and development study, and urban program coordination.

A. Community Block Development Grants

Community Development Block Grants, authorized by the Housing and Community Development Act of 1974, can cover up to 100 percent of the project costs. The funds may be used to assist in (1) the acquisition of real property for preservation or restoration of historic sites, urban beautification, conservation of open space, natural resources or scenic areas provision of recreation, or the guidance of urban development; (2) the construction or installation of public works and facilities, including recreation centers and facilities, senior centers, and historic properties. To be eligible for a block grant, the applicant must provide a summary of a three-year plan identifying community needs and methods to meet those needs. Community Development Block Grant monies can also be used as the local match for Land and Water Conservation Fund (LWCF) money.

B. 701 Comprehensive Planning Assistance Program

The Comprehensive Planning Assistance Program, popularly called the "701" Program of which recreation planning is one phase, funds such activities as continuous community planning and management, improved executive planning, decision-making, and management capabilities by state, local and regional officials. It also funds plans developed by planning organizations. The matching formula for 701 funds is 66.6 percent federal, 33.3 percent local.

3. Department of Agriculture Farmers Home Administration

The Farmers Home Administration (FMHA) provides credit for those in rural areas who are unable to obtain credit from other sources at reasonable rates and terms. The agency operates principally under the Consolidated Farm and Rural Development Act of 1921, and Title V of the Housing Act of 1949, as amended.

A. Recreation Loans to Farmers

The Farmers Home Administration (FMHA) makes loans to assist eligible farmers in boosting their incomes by converting all or portions of their farms and ranches to income-producing outdoor recreation enterprises.

Recreation loans may be used to develop land and water resources; repair and construct buildings; buy land, equipment, livestock, and other recreation items and pay necessary operating expenses.

Intermediate-term loans up to $50,000 may be made to finance recreation equipment and operating expenses. The interest rates on these loans are determined each July 1. Repayments are scheduled over one to seven years; in some cases loans may be renewed for up to five years.

Long-term loans are also available. A farmer may borrow up to $100,000 from FMHA with maximum terms of 40 years. The interest rate is five percent per year on the unpaid principal. In addition, the farmer can borrow a portion of the credit he needs from other long-term credit sources at rates and terms established by the other lender, provided the total debts against the farmer do not exceed $225,000 or the market value of the security, whichever is less.

Additional FMHA loan programs available for recreation/open space projects include:

B. Resource Conservation and Development Loans are available for public agencies and local nonprofit corporations in authorized Resource Conservation and Development (RC&D) areas for up to $250,000. Development of facilities for rural community public outdoor-oriented water-based recreation is a fundable use.

C. Community Facility Loans are available, for up to 40 years, to public or quasi-public nonprofit organizations serving the public in rural areas or towns of less than 10,000 population. Construction, enlargement, or improvement of community facilities, including those which offer social, cultural, health, or recreation benefits are fundable uses.

D. Waste Loans and Grants are available under the same conditions as community facility loans and are used for the construction of wastewater treatment facilities.

E. Watershed Protection and Flood Prevention loans are available for public agencies and nonprofit organizations. These may be used in conjunction with the SCS program described below.

4. Department of Agriculture Soil Conservation Service

The Soil Conservation Service (SCS) has responsibility for developing and implementing a national soil and water conservation program in cooperation with landowners, community planning agencies, regional resource groups, and other agencies of federal, state, and local governments. There are two major SCS programs which provide financial assistance for recreation purposes.

A. Resource Conservation and Development (Public Law 87-703, as amended) Financial assistance is available from SCS for the planning and installation of approved measures specified in RC&D area plans serving purposes such as public water based recreation, flood prevention, sedimentation and erosion control, fish and wildlife developments, agricultural water management purposes, rural community water supply and quality management, control and abatement of agriculture-related pollution, disposal of solid wastes, and rural fire protection. Financial assistance may be available for up to 50 percent of the cost of land rights acquisition and for 50 percent of the construction costs of recreation structures. In addition, they must provide for operation and maintenance and all needed water rights. Loan assistance may be provided for the local share of these costs.

B. Watershed Protection and Flood Protection (Public Law 83-566) SCS provides financial assistance in planning and implementing works of improvement to protect, develop, and utilize the land and water resources in small watersheds. Assistance is provided in sharing costs of public waterbased recreation, fish and wildlife management, flood protection, irrigation, drainage, and sedimentation control. Long-term credit is available to help local interests with their share of the costs.

Funding is allowable up to 50 percent for public recreation purposes. Project sponsors can borrow money under authority of the act to finance their share of construction costs.

5. Department of Commerce

A. Economic Development Administration

The Economic Development Administration (EDA), as authorized by the Public Works and Economic Development Act of 1965 as amended, may provide loans and grants for the construction of public works facilities, including public tourism facilities. The project must fulfill a pressing economic development need of the area. Up to 80 percent of the project costs can be met with grant monies.

B. National Oceanic and Atmospheric Administration Office of Coastal Zone Management

The Coastal Zone Management Act of 1972, as amended, authorizes the Office of Coastal Zone Management to provide planning and implementation grants to coastal states and territories to develop and carry out state coastal zone management programs. The purpose of these grants are sufficiently broad to encompass recreation purposes. One of the primary goals of the CZM act is to increase access to the coastal zone.

C. Coastal Zone Management Coastal Energy Impact Program

This program provides funds to offset impacts of coastal energy development. Coastal recreation areas can be funded as replacements for areas in harbors and ports used for energy related facilities.

6. Federal Highway Administration

The FHA recognizes the public's need to travel on foot or by non-motorized vehicle and permits the use of Federal-aid Highway funds to construct pedestrian and bicycle facilities. These may be constructed not only as added features of highway construction projects, but as separate projects where it can be shown that the facility will divert pedestrian or bike traffic that would normally use the Federal-aid roadway. The funding ratio is generally 70 - 30 federal to non-federal money. In qualifying for these funds, the project must compete with conventional highway projects.

7. Department of the Treasury: General Revenue Sharing

General revenue sharing is a form of financial assistance available to all general purpose units of government under authority of the State and Local Fiscal Assistance Act, as amended. The Act provides that State and local governments may spend Federal funds for any purposes which is considered a permissable use of the State or local government's own revenues under applicable law. In most cases recipient governments may spend revenue sharing funds for the State or local contribution to another Federal program requiring a State/local match.

8. U.S. Army Corps of Engineers: Federal Water Project Recreation Act

The Federal Water Project Recreation Act of 1965 (Public Law 89-72) made outdoor recreation a consideration in all federal navigation, flood control, reclamation, and hydroelectric resource projects. Up to 50 percent of all project costs may be allocated to recreation and fish and wildlife enhancement. The Corps will pay all of the non-separable first costs of recreation facility construction and 50 percent of the separable costs. Recreation facilities may also be added to completed Corps or Bureau of Reclamation projects if a non-federal public agency agrees to pay at least 50 percent of the installation costs and to assume operation and maintenance responsibilities.

9. U.S. Fish and Wildlife Service

U.S. Fish and Wildlife administers the Pitman-Robertson Program, which provides grants covering up to 70 percent of the costs of (1) restoration or management of wildlife populations and the preservation and improvement of habitat for non-game species, endangered species, hunting, and other use of the resources; (2) providing facilities and services for conducting a hunter safety program. The grants are available only to state fish and game departments. The Dingell-Johnson Program provides similar funding for projects designed to restore and manage sport fishing populations for the preservation and improvement of sport fishing. These grants may be used for land acquisition, development, research, and coordination.

10. Department of Labor

The Employment and Training Administration (ETA) is authorized under the Comprehensive Employment and Training Act (CETA), as amended, to provide funds for several categories of workers potentially useful in parks and recreation settings. These include:

- Funds for summer youth programs to provide employment in public works projects, including community conservation and improvement projects.

- Temporary public service employment for unemployed or under-employed persons.

- Young Adult Conservation Corps to carry out work projects on federal or non-federal public lands or waters.

Where an agency or local government has office space and the capability to administer a grant, this program may permit the hiring of a full time director to oversee and coordinate the multiple use project.

11. Community Service Administration

The CSA's Community Action Program seeks to mobilize and channel the resources of private and public organizations and institutions into anti-poverty action, to stimulate more effective approaches to the solution of poverty programs, and to strengthen communications and mutual understanding between individuals and institutions.

Project grants supplied by CSA may be applied, among other uses, to youth development programs and recreational projects. The grants are made to approved Community Action Agencies and vary in size from 60 to 70 percent of the project cost. The Summer Youth Recreation Program provides financial support for staff and logistical services to enhance recreation opportunities for selected populations.

12. Department of Health, Education and Welfare (HEW)

The Department of Health, Education and Welfare has two programs that can be of assistance in the park and recreation field.

A. Environmental Education

Funds are available from the Office of Education for programs to develop effective environmental education practices and materials. This includes demonstration and pilot projects designed to educate the public on problems.

B. Older American Act

As amended, authorizes grant of up to 75% of the project expenses to state and localities to acquire, alter, or renovate existing facilities to serve as multi-purpose centers for senior citizens. Recreation is an allowable service.

13. Private Funding Sources

In some instances, lands and funds for recreational purposes can be obtained from private sources. These include foundations, trusts, and individual and corporate landowners. The private donation of land (or of a public use easement of the land) can serve as a tax benefit to the donor and can significantly reduce acquisition costs to the community. These tax benefits extend not only to individual property owners, but to industrial and commercial holders as well. Since in many cases the landowner's right to develop the land was surrendered previously for purposes of constructing and maintaining the sewer facility (interceptor, force main, etc.), the remaining value may be relatively small. This, coupled with the prospect of reduced taxes, may be sufficient incentive for some property owners to permit public use of the land or to transfer ownership to the community.

Land donation occurred recently in several New Jersey communities, where three properties were acquired for purposes of establishing the Towpath Trail. One trail segment was donated by a private residential property owner, a second by a semi-public institution. The third public use easement was deeded to the local community as part of the subdivision process when several building lots were created from a larger tract of land.

With respect to financial contributions, there are numerous foundations which provide assistance to environmental and recreational projects of public benefit. A listing of these foundations can be found in the latest edition of The Foundation Directory, published by the Foundation Center, 888 Seventh Avenue, New York, New York 10019 (212) 489-8610.

CHAPTER 4

State Overview

The cleanup of Massachusetts' waters has made new open space and recreational opportunities possible. This same clean-up increases shoreline land value and, in many cases, has spurred development. Unfortunately, all too frequently, such development has restricted public access to these waters. However, the large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water.

The goal of the Federal Pollution Control Acts as amended in 1977 is to ensure that all waters meet Class B water quality. Class B is commonly referred to as the "fishable-swimmable" class, which means suitable for water contact recreation. This already suggests a strong link between cleanup efforts and recreation.

The Act further directs, in Section 208 and Section 201, that grantees assess recreation and open space opportunities as a part of this wastewater cleanup effort. Section 201 directly focuses on wastewater treatment, while Section 208 also includes opportunities that can be expected to result from improved water quality. Thus, the remainder of the report examines, first regionally, and then town-by-town, the recreation and open space opportunities that can be expected to result from water cleanup. Both the potential use of lands associated with treatment works and increased access to water-based recreation will be considered in this analysis.

A. Supply and Demand

The Commonwealth of Massachusetts has a total of 889,561 acres devoted to recreation. According to the 1978 State Comprehensive Recreation Plan, out of a total of 5,776 sites, 2409 are intensive recreation areas (high density, swimming pools, tennis courts); 1606 are general recreation areas (bicycle paths, picnic areas, boat ramps); and 1598 are natural areas (undeveloped areas, hunting, fishing, hiking, nature study).

The same study found that the three most popular activities for Massachusetts residents are bicycling, nature walking, and pool swimming. An analysis of 1977 supply and demand was used to determine critical needs for the state by region. The study documents by region the need for facilities (in alphabetical order) for camping, fishing, golf, hiking, hunting, ice skating, downhill and cross-country skiing, snowmobiling, swimming, tennis, and nature walking. Much of this demand could be met by multiple use opportunities investigated in this thirteen volume report.

B. Opportunities

Opportunities centered around water quality improvement are of two primary types: 1) those associated with the cleanup of polluted water bodies; and 2) multiple use of treatment facilities for recreation sites. Multiple use

facilities already exist around the country, ranging from hiking/biking trails along interceptor easements to parks and gardens developed on lands surrounding wastewater treatment plants.

Treatment Facilities

Treatment facilities, in most cases, refer to three basic sewer system components: interceptor or sewer pipes, pump stations, and treatment plants of several varieties. The study examined 181 existing and 81 proposed wastewater treatment plants, as well as numerous pump stations and interceptor lines for their multiple use potential. Table 4 lists the existing and proposed treatment facilities which have potential for recreational use.

Potential multiple uses of treatment facilities include boat launch ramps on treatment plant sites; informal picnic areas on open spaces on the site of reseeded sludge beds; and hiking/bicycling trails on easements for interceptor lines.

Of the 181 communities with existing facilities studied, 121 had potential for recreation use at one or more sites, and nine were already operating as multiple use sites (Hull, Marblehead, Mattapoisett, Medfield, New Bedford, Peabody, Rockport, Wellesley, and Winchester). Many other towns built wastewater facilities (especially pump stations) on recreation land and thus are multiple use sites. Of the 81 communities with facilities as yet in design or construction phases, 45 had multiple use potential at one or more sites, and another 19 communities were early enough in the facility planning stage that recreation could be incorporated into the initial plan as required in the regulations (see Part I). Part III identifies promising projects for implementation.

Polluted Water Bodies

There are many multiple use opportunities for recreation involving polluted water bodies. These include boating, swimming, fishing, picnic areas, camping, hiking/biking paths, and boat launching ramps.

290 polluted water bodies in 200 cities and towns were examined for recreation potential associated with water cleanup. Opportunities of many kinds were identified on all but 14. Many had been or were currently being used as recreational sites. Others were large rivers with opportunities only at specific sites.

Table 5 lists first the rivers and streams, and secondly, the lakes and ponds studied. The actual investigation proceeded town-by-town so a water body which lies in more than one town may appear in several towns' write-ups.

Appendix A explains how these water bodies were selected and the public review procedures. In many cases, recommendations for specific water quality actions are made in conjunction with recommendations for recreational use.

Table 4

Multiple Use of Treatment Facilities

Potential Projects by Community

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended For Study	Examined in This Study	Potential Projects
Ashland								X	X
Abington								X	X
Acton									
Acushnet				X	NO			X	X
Adams	X	X	X					X	X
Agawam	X	X	X					X	X
Alford								X	X
Amesbury	X	X	X	X	X	X		X	X
Andover	X	X	X	X	NO			X	X
Amherst	X	X	X					X	X
Arlington								X	X
Ashburnham				X	NO			X	X
Ashby									
Ashfield				X	X	X		X	X
Athol				X	X	X		X	X
Attleboro	X	X	NO	X	NO			X	X
Auburn	X	X	X					X	X
Avon								X	X
Ayer	X	X	X	X	X	X		X	X
Barnstable	X	X	X					X	X
Barre				X	X	X			
Becket								X	X
Bedford	X	X	X					X	X
Belchertown	X	X	X					X	X
Bellingham				X	NO				
Belmont	X	X	X						
Berkley								X	X
Berlin									
Bernardston									
Beverly	X	X	X	X	NO				
Billerica	X	X	X	X	X	X		X	X
Blackstone	X	X	NO					X	X
Blanford									
Bolton									
Boston	X	X	X	X	X	X		X	X
Bourne				X	X		X		
Boxborough									
Boxford									
TOTAL Page 1	16	16	14	14	8	7	1	25	25

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
Boylston									
Braintree	X	X	X						
Brewster									
Bridgewater	X	X	NO	X	X	NO		X	X
Brimfield								X	X
Brockton				X	X	NO		X	X
Brookfield				X	NO			X	X
Brookline	X	X	NO					X	X
Buckland	X	X	X					X	X
Burlington	X	X	NO						
Cambridge	X	X	NO	X	NO			X	X
Canton	X	X	X						
Carlisle									
Carver								X	X
Charlemont				X	X	X		X	X
Charlton	X	X	NO	X	NO			X	X
Chatham	X	X	NO						
Chelmsford				X	X	X		X	X
Chelsea	X	X	NO	X	X		X		
Cheshire								X	X
Chester								X	X
Chesterfield				X	X	NO		X	X
Chicopee	X	X	X	X	X	X		X	X
Chilmark									
Clarksburg	X	X	X						
Clinton	X	X	X					X	X
Cohasset	X	X	NO	X	X	X			
Colrain								X	X
Concord	X	X	X	X	X	NO		X	X
Conway									
Cummington									
Dalton	X	X	NO					X	X
Danvers	X	X	X	X	NO				
Dartmouth	X	X	X	X	NO			X	X
Dedham	X	X	X	X	NO			X	X
Deerfield	X	X	X						
Dennis									
Dighton	X	NO		X	NO			X	X
Douglas	X	X	X					X	X
Dover									
Dracut	X	X	NO	X	X	X		X	X
Dudley	X	X	NO					X	X
Dunstable								X	X
Duxbury	X	X	NO						
TOTAL Page 2	25	24	12	17	10	5	1	26	26

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
E.Bridgewater								X	X
E.Brookfield								X	X
E.Longmeadow	X	X	X						
Eastham									
Easthampton	X	X	X					X	X
Easton								X	X
Edgartown	X	X	X	X	NO				
Egremont									
Erving	X	X	X	X	X		X	X	X
Essex	X	X	X						
Everett	X	X	NO						
Fairhaven	X	X	X	X	X	NO		X	X
Fall River	X	X	NO	X	X	NO		X	X
Falmouth	X	NO		X	X		X		
Fitchburg	X	X	X					X	X
Florida									
Foxborough				X	NO			X	X
Framingham	X	X	NO					X	X
Franklin	X	X	NO	X	X	X		X	NO
Freetown									
Gardner	X	X	X	X	X	NO		X	X
Gay Head									
Georgetown								X	X
Gill	X	X	NO					X	X
Gloucester	X	X	NO	X	X	X			
Goshen								X	X
Gosnold				X	X		X	X	X
Grafton	X	X	X	X	NO			X	X
Granby				X	X	NO		X	X
Granville									
Gt.Barrington	X	X	X						
Greenfield	X	X	X	X	X	X			
Groton				X	NO			X	X
Groveland	X	X	X					X	X
Hadley	X	X	X	X	NO			X	X
Halifax								X	X
Hamilton				X	NO				
Hampden									
Hancock									
Hanover									
Hanson								X	X
Hardwick	X	X	X						
Harvard								X	X
Harwich								X	NO
TOTAL Page 3	21	20	14	16	10	3	3	25	23

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
Hatfield				X	X	X		X	X
Haverhill	X	X	X	X	X	X		X	X
Hawley									
Heath									
Hingham	X	X	X	X	NO				
Hinsdale	X	X	NO						
Holbrook	X	X	X	X	X	X			
Holden	X	X	NO					X	X
Holland									
Holliston				X	NO				
Holyoke	X	X	X	X	X	X		X	X
Hopedale	X	X	X	X	NO			X	X
Hopkinton				X	NO				
Hubbardston									
Hudson	X	X	X	X	NO			X	X
Hull	X	X	HAS						
Huntington	X	X	X					X	X
Ipswich	X	X	X						
Kingston				X	X		X	X	X
Lakeville								X	X
Lancaster	X	X	X					X	X
Lanesborough	X	X	NO					X	X
Lawrence	X	X	NO					X	X
Lee	X	X	X					X	X
Leicester	X	X	NO	X	NO			X	X
Lenox	X	X	X	X	X	X			
Leominster	X	X	X					X	X
Leverett								X	X
Lexington	X	X	X	X	X	X		X	X
Leyden									
Lincoln								X	X
Littleton								X	NO
Longmeadow	X	X	X	X	NO			X	X
Lowell	X	X	X	X	X	X		X	X
Ludlow	X	X	X	X	X	X		X	X
Lunenburg				X				X	X
Lynn	X	X	X	X	X	X			
Lynnfield								X	X
Malden	X	X	NO	X	X	NO			
Manchester	X	X	NO	X	NO				
Mansfield	X	X	NO	X	X	NO		X	X
Marblehead	X	X	IN USE						
Marion	X	X	NO						
Marlborough	X	X	NO	X	X	NO		X	X
TOTAL Page 4	29	29	19	22	13	9	1	26	25

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
Marshfield	X	X	X						
Mashpee									
Mattapoisett	X	X	IN USE	X	NO				
Maynard	X	X	X	X	X	X		X	X
Medfield	X	X	X						
Medford	X	X	NO						
Medway	X	X	X						
Melrose	X	X	NO						
Mendon								X	X
Merrimac	X	X	X					X	X
Methuen	X	X	X						
Middleborough	X	X	NO					X	X
Middlefield									
Middleton				X	X		X		
Milford	X	X	X	X	X		X	X	X
Millbury	X	X	NO	X	X	NO		X	X
Millis	X	X	NO	X	X		X	X	X
Millville								X	X
Milton	X	X	X						
Monroe	X	X	X						
Monson	X	X	X						
Montague	X	X	X	X	X	X		X	X
Monterv								X	X
Montgomery								X	X
Mt.Washington									
Nahant	X	X	X						
Nantucket	X	X	X	X	X		X	X	X
Natick	X	X	X					X	X
Needham	X	X	X					X	X
New Ashford									
New Bedford	X	X	NO	X	NO			X	X
New Braintree									
New Marlborough									
New Salem								X	X
Newbury									
Newburyport	X	X	X					X	X
Newton	X	X	X					X	X
Norfolk				X	X		X	X	X
North Adams	X	X	X						
N.Andover	X	X	X						
N. Attleborough	X	X	X					X	X
N. Brookfield	X	X	X					X	X
N.Reading								X	X
Northampton	X	X	X					X	X
TOTAL Page 5	29	29	23	10	8	2	5	23	23

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
Northborough	X	X	X	X	X	failed try		X	X
Northbridge	X	X	X	X	X	X		X	X
Northfield	X	X	X					X	X
Norton				X	NO				
Norwell				X	NO				
Norwood	X	X	X	X	X	X			
Oak Bluffs									
Oakham								X	X
Orange	X	X	X					X	X
Orleans				X	X	X			
Otis								X	X
Oxford	X	NO						X	X
Palmer				X	X	X		X	X
Paxton									
Peabody	X	X	NO						
Pelham									
Pembroke								X	X
Pepperell	X	X	NO	X	X	X		X	X
Peru									
Petersham									
Phillipston								X	X
Pittsfield	X	X	X					X	X
Plainfield									
Plainville	X	NO		X	NO			X	X
Plymouth	X	X	NO	X	X	NO		X	X
Plympton									
Princeton									
Provincetown								X	X
Quincy	X	X	X	X	X	X			
Randolph	X	X	X						
Raynham	X	X	NO					X	X
Reading	X	X	X					X	X
Rehoboth								X	X
Revere	X	X	X						
Richmond									
Rochester									
Rockland	X	X	X						
Rockport	X	X	X					X	X
Rowe									
Rowley									
Royalston	X	X	X	X	X		X	X	X
Russell	X	X	X	X	X	X		X	X
Rutland	X	NO		X	NO				
TOTAL Page 6	21	18	14	14	10	7	1	21	21

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
Salem	X	X	X	X	X	X			
Salisbury				X	X	X			
Sandisfield									
Sandwich				X	X	X		X	X
Saugus	X	X	NO	X	X	NO		X	X
Savoy									
Scituate	X	X	X	X	X	X			
Seekonk								X	X
Sharon									
Sheffield									
Shelburne	X	X	X						
Sherborn									
Shirley								X	X
Shrewsbury	X	X	NO	X	NO			X	X
Shutesbury								X	X
Somerset	X	X	X	X	NO			X	X
Somerville	X	X	X					X	X
S.Hadley	X	X	X					X	X
Southampton				X	NO				
Southborough									
Southbridge	X	X	NO	X	X		X		
Southwick								X	X
Spencer	X	X	X	X	NO			X	X
Springfield	X	X	X					X	X
Sterling								X	X
Stockbridge	X	X	NO	X	X	X		X	X
Stoneham	X	X	NO						
Stoughton	X	X	X						
Stow								X	NO
Sturbridge	X	X	X	X	X	NO		X	X
Sudbury								X	NO
Sunderland	X	X	X					X	X
Sutton	X	X	NO	X	NO			X	X
Swampscott	X	X	NO	X	X	X			
Swansea				X	NO			X	X
Taunton	X	X	NO					X	X
Templeton	X	X	X					X	X
Tewksbury				X	X	X		X	X
Tisbury				X	X		X		
Tolland									
Topsfield									
Townsend								X	X
Truro									
Tyngsborough				X	X	X		X	X
Tyringham									
TOTAL Page 7	20	20	12	18	12	8	2	25	23

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
Upton	X	X	NO					X	X
Uxbridge	X	X	X					X	X
Wakefield	X	X	X						
Wales								X	X
Walpole	X	X	X	X	NO				
Waltham	X	X	X					X	X
Ware	X	X	X					X	X
Wareham	X	X	NO	X	NO			X	X
Warren	X	X	NO	X	X		X		
Warwick									
Washington									
Watertown	X	X	NO					X	X
Wayland									
Webster	X	X	NO					X	X
Wellesley	X	X	HAS	X	X		X	X	X
Wellfleet				X	NO			X	X
Wendell								X	X
Wenham									
W.Bolyston									
W.Bridgewater								X	X
W.Brookfield									
W.Newbury								X	X
W.Springfield	X	X	X					X	X
W.Stockbridge				X	X		X	X	X
W. Tisbury									
Westborough	X	X	X	X	X	X		X	X
Westfield	X	X	X	X	X	X		X	X
Westford				X	X	X		X	X
Westhampton									
Westminster				X	NO			X	X
Weston				X	X	X		X	X
Westport				X	NO			X	X
Westwood	X	X	X						
Weymouth	X	X	X						
Whately									
Whitman				X	NO			X	X
Wilbraham	X	X	X	X	X		X	X	X
Williamsburg	X	X	NO					X	X
Williamstown	X	X	X	X	NO			X	X
Wilmington	X	X	X						
Winchendon	X	X	X					X	X
Winchester	X	X	HAS	X	NO			X	X
Windsor									
Winthrop	X	X	X						
TOTAL Page 8	23	23	17	16	8	4	4	27	27

Table 4 (cont.)

TOWN or CITY	Existing Wastewater Treatment Facilities			Proposed Wastewater Treatment Facilities				Polluted Water Bodies	
	Facilities	Examined in This Study	Potential Projects	Proposed Facilities	Examined in This Study	Potential Projects	Recommended for Study	Examined in This Study	Potential Projects
Woburn	X	X	X					X	X
Worcester	X	X	NO	X	X	NO		X	X
Worthington									
Wrentham				X	NO				
Yarmouth				X	X		X		
TOTAL Page 9	2	2	1	3	2	0	1	2	2
RECAPITULATION									
Page 1	16	16	14	14	8	7	1	25	25
Page 2	25	24	12	17	10	5	1	26	26
Page 3	21	20	14	16	10	3	3	25	23
Page 4	29	29	19	22	13	9	1	26	25
Page 5	29	29	23	10	8	2	5	23	23
Page 6	21	18	14	14	10	7	1	21	21
Page 7	20	20	12	18	12	8	2	25	23
Page 8	23	23	17	16	8	4	4	27	27
Page 9	2	2	1	3	2	0	1	2	2
TOTAL MASS.	186	181	121 + 5 IN USE	130	81	45	19	200	195

Table 5
Polluted Water Bodies
Examined for Recreation Potential Associated
With Water Clean-Up

RIVERS AND STREAMS	POTENTIAL
Aberjona River (Reading)	yes
Acushnet River (Acushnet, New Bedford, Fairhaven)	yes
Assabet River (Westborough to Acton)	yes
Back River (Hingham and Weymouth)	yes
Baker Brook (Lunenburg, Fitchburg)	yes
Barnstable Harbor (Barnstable)	yes
Beaver Brook (Templeton)	yes
Beaver Brook (Lowell, Dracut)	yes
Beaver Brook (Phillipston)	yes
Blackstone River (Worcester to Blackstone)	yes
Boston Harbor (Boston, Dedham)	yes
Bungay River (North Attleborough, Attleboro)	yes
Cady Brook (Charlton, Southbridge)	yes
Catacoonamug Brook (Shirley)	yes
Charles River (Milford to Boston)	yes
Chartley Brook (Attleboro)	yes
Chester Brook (Waltham)	yes
Chicopee River (Ludlow to Chicopee)	yes
Clark Cove (New Bedford, Dartmouth)	yes
Cobbler Brook (Merrimack)	yes
Cole River (Swansea)	yes
Concord River (Concord, Bedford, Billerica)	yes
Connecticut River (Northfield to Longmeadow)	yes
Cotley River (Berkeley, Taunton)	yes
Counterpane Brook (Clinton)	yes
Dark Brook (Auburn)	yes
Deerfield River (Charlemont to Buckland)	yes
Dunn Brook (Gardner)	yes
Dunn Brook (North Brookfield, East Brookfield, Brookfield)	yes
East Brookfield River (East Brookfield)	yes
Fall Brook (Leominster)	yes
Falulah Brook, Greens Pond, Putnam Pond (Fitchburg)	yes
Five Mile River (Spencer, North Brookfield)	yes
Flag Brook (Fitchburg)	yes
Fore River (Weymouth)	yes
French River (Leicester, Oxford and Webster)	yes
French Stream/Indian Head River (Weymouth to Pembroke)	yes
Great Brook (Westfield)	yes
Green Harbor (Marshfield)	yes
Green River (Alford - Great Barrington)	yes
Green River (Greenfield)	yes
Green River (Williamstown)	yes
Harris/Basset Brooks (Easthampton)	yes
Herring River (Harwich)	no
Hop Brook (Sudbury)	no
Hoosic River (Williamstown to Adams)	yes
Housatonic River (Pittsfield to Connecticut Border)	yes
Housatonic River, East Br. (Hinsdale to Pittsfield)	yes
Housatonic River, West Br. (Lanesborough to Pittsfield)	yes

Table 5 (continued)
Polluted Water Bodies
Examined for Recreation Potential Associated
With Water Clean-Up

RIVERS AND STREAMS	POTENTIAL
Hubbard Brook (Sheffield, Egremont)	yes
James Brook (Ayer, Groton)	yes
Jones River (Kingston)	yes
Kettle Brook (Winchester)	yes
Konkapot River (New Marlboro to Monterey)	yes
Lee River (Swansea, Somerset)	yes
Little River (Russell, Westfield)	yes
Little River (Haverhill)	yes
Manhan River (Easthampton, Northampton)	yes
Matfield River (East Bridgewater)	yes
Merrimack River (Tyngsborough to Salisbury)	yes
Mill Brook (Lexington, Arlington)	yes
Mill Creek (Sandwich)	yes
Mill River (Hatfield)	yes
Mill River (Hopedale, Mendon, Blackstone)	yes
Mill River (Rowley)	yes
Mill River (Taunton)	yes
Mill River (Williamsburg, Northampton)	yes
Millers River (Winchendon to Montague)	yes
Mine Brook (Franklin)	no
Monoosnoc Brook (Leominster)	yes
Muddy River (Brookline)	yes
Mumford River (Douglas to Northbridge)	yes
Mystic River (Arlington to Boston)	yes
Nantucket Harbor (Nantucket)	yes
Nashua River (Lancaster to Dunstable)	yes
Nemasket River (Lakeville, Middleborough)	yes
Neponset River (Walpole)	yes
New Bedford Harbor (Fairhaven)	yes
Nonacoicus Brook (Ayer, Harvard)	yes
North Nashua River (Fitchburg to Lancaster)	yes
Palmer River (Rehoboth, Swansea)	yes
Parker River (Boxford to Newbury)	yes
Paskamansett River (Dartmouth)	yes
Phillips Brook (Ashburnham, Westminster, Fitchburg)	yes
Pine Neck Creek (Dorchester)	yes
Plymouth Harbor (Plymouth)	yes
Poquoy Brook (Lakeville, Middleborough)	yes
Powwow River (Amesbury)	yes
Provincetown Harbor (Provincetown)	yes
Quaboag River (Palmer, Monson)	yes
Quequechan River (Fall River)	no
Quinebaug River (Dudley)	yes
Rumford River (Foxborough, Mansfield, Norton)	yes
Runnis River (Seekonk)	yes
Salisbury Plain River (Brockton, West Bridgewater and East Bridgewater)	yes
Sandy Bay River (Rockport)	yes

Table 5 (continued)
Polluted Water Bodies
Examined for Recreation Potential Associated
With Water Clean-Up

RIVERS AND STREAMS	POTENTIAL
Sargent Brook (Lenox)	no
Satucket River (East Bridgewater)	yes
Saugus River (Saugus)	yes
Sawmill Brook (Bridgewater)	yes
Sawmill Brook (Newton to Boston)	yes
Seven Mile River (Plainville to Seekonk)	yes
Seven Mile River (Spencer, East Brookfield)	yes
Shumatuscacant-Satusket River (Abington to Hanson)	yes
South River (Ashfield)	yes
South River (Marshfield, Duxbury)	yes
South Nashua River (Clinton, Lancaster)	yes
Spickett River (Methuen, Lawrence)	yes
Squanacook River (Townsend, Groton, Shirley)	yes
Stop River (Medfield to Wrentham)	yes
Stony Brook (Chelmsford, Westford)	yes
Stony Brook (Boston)	yes
Sudbury River (Westborough to Sudbury)	yes
Sugar Brook (Millis)	yes
Swallow River (Concord)	yes
Swift River (Belchertown, Palmer)	yes
Taunton River (Bridgewater to Fall River)	yes
Ten Mile River, including Mechanics, Blackington, Dodgeville and Hebronville Ponds (Plainville to Seekonk)	yes
Three Mile River (Norton, Taunton, Dighton)	yes
Trout Brook (Brockton)	yes
Wading River (Norton)	yes
Ware River (Barre, Ware, Palmer)	yes
Wareham River (Wareham)	yes
Wellfleet Harbor (Wellfleet)	yes
Westfield River (Chester to West Springfield)	yes
Weweantic River (Carver to Wareham)	yes
Whitman River (Ashburnham, Westminster, Fitchburg)	yes
Williams River (Great Barrington, West Stockbridge)	yes

LAKES AND PONDS	POTENTIAL
Aldrich Lake (Granby)	yes
Ames Pond (Easton)	yes
Ames Pond (Tewksbury)	yes
Arcadia Lake (Belchertown)	yes
Arlington Reservoir (Arlington, Lexington)	yes
Lake Attitash (Amesbury, Merrimack)	yes
Baddacook Pond (Groton)	yes
Big Alum Pond (Sturbridge)	yes
Big Pond (Otis)	yes
Lake Boon (Stow, Hudson)	no
Bridges Pond (Williamstown)	yes
Brierly Pond (Millbury)	yes
Brockton Reservoir (D.W. Field Park System (Brockton))	yes

Table 5 (continued)
Polluted Water Bodies
Examined for Recreation Potential Associated
With Water Clean-Up

LAKES AND PONDS	POTENTIAL
Brooks Pond (North Brookfield, Spencer, Oakham, New Braintree)	yes
Lake Buel (Monterey)	yes
Buffumville Reservoir (Charlton)	yes
Card Pond (West Stockbridge)	yes
Carver Pond (Bridgewater)	yes
Cedar Pond (Sturbridge)	yes
Center Pond (Dalton)	yes
Center Pond (Becket)	yes
Chaffins Pond (Holden)	yes
Chartely Pond (Attleboro, Norton)	yes
Chauncy Pond (Westborough)	yes
Cheshire Reservoir (Cheshire, Lanesboro)	yes
Cleveland Pond (Abington)	yes
Clinton Lakes: South Meadow, Mossy and Cochlace (Clinton,Sterling)	yes
Lake Cochituate (Wayland, Framingham, Natick)	yes
Coes Reservoir (Worcester)	yes
Congamond Lakes: North, Middle, South and Goose Ponds (Southwick)	yes
Cornells Pond (Dartmouth)	yes
Cow (Whitney Pond) (Gardner)	yes
Crackrock Pond (Foxborough)	yes
Crystal Lake (Douglas)	yes
Cuttyhunk Pond (Gosnold)	yes
Damon Pond (Chesterfield, Goshen)	yes
Dean Pond (Oakham)	yes
Dorothy Pond (Millbury)	yes
Duck (Jack) Pond (Gardner)	yes
Eagle Lake (Holden)	yes
Echo Lake (Milford)	yes
Eddy Pond (Auburn)	yes
Factory Hollow (Puffers) Pond (Amherst)	yes
Farm Pond (Framingham)	yes
Farmer's Pond (Attleboro)	yes
Fens (Boston)	yes
Five Mile Pond System (Springfield)	yes
Fletcher Pond (Ayer)	yes
Flint Pond - North and South (Shrewsbury)	yes
Flow Augmentation Pond (Westborough)	yes
Forest Lake (Palmer)	yes
Forge Pond (Westford)	yes
Forge Pond (Granby)	yes
Fort Pond (Littleton)	yes
Four Ponds (Lancaster)	yes
Lake Garfield (Monterey)	yes
Lake George (Wales)	yes
Goose Pond (Lee)	yes
Goodrich Pond (Pittsfield)	yes

Table 5 (continued)
Polluted Water Bodies
Examined for Recreation Potential Associated
With Water Clean-Up

LAKES AND PONDS	POTENTIAL		POTENTIAL
Great Pond (Hatfield)	yes	Leverett Pond (Leverett)	yes
Green Hill Pond (Worcester)	yes	Lockey Pond (Uxbridge)	yes
Greenville Pond (Leicester)	yes	Long Pond (Tyngsborough, Dracut)	yes
Hager Pond (Marlborough, Framingham)	yes	Lost Pond (Brookline)	yes
Halls Pond (Brookline)	yes	Lower Mill Pond (Easthampton)	yes
Hammond Pond (Goshen)	no	Martin's Pond (North Reading)	yes
Hampton Ponds (Westfield)	yes	Lake Metacomet (Belchertown)	yes
Hardy Pond (Waltham)	yes	Mill Pond (Littleton)	no
Harris (Pinewood)Pond (Stoughton)	yes	Morses Pond (Wellesley, Natick)	yes
Heart Pond (Westford, Chelmsford)	yes	Mouchaug Pond (Douglas, Sutton)	yes
Highland Lake (Norfolk)	no	Mushakeen Pond (Ashland)	yes
Hobart Pond (Whitman)	yes	Mystic Lakes, Upper and Lower (Arlington, Medford, Winchester)	yes
Horn Pond (Woburn, Winchester)	yes	Lake Nashawannuck (Easthampton)	yes
Horse Pond (North Brookfield)	yes	Needham Reservoir (Needham)	yes
Houghton's Pond (Holliston)	no	Neponset Reservoir (Foxboro)	yes
Indian Lake (Worcester)	yes	Newton Pond (Shrewsbury)	yes
Jacobs Pond (Norwell)	yes	Nine Mile Pond (Wilbraham)	yes
Jordon Pond (Shrewsbury)	yes	Lake Nipmuck (Mendon)	yes
Kittredge Dam Site (North Brookfield, Spencer)	yes	Lake Nippenicket (Bridgewater)	yes
Lackey Pond (Uxbridge, Northbridge)	no	Lake Noquochoke (Dartmouth and Westport)	yes
Lake Lashaway (North Brookfield, East Brookfield)	yes	Norton Reservoir (Plainville)	yes
Laurel Lake (Lee, Lenox)	yes	Norwich Pond (Huntington)	yes
Leesville Pond (Auburn)	yes	Nutting Lake (Billerica)	yes
Leverett Pond (Brookline)	yes	Oxbow Pond (Northampton, Easthampton)	yes

Table 5 (continued)
Polluted Water Bodies
Examined for Recreation Potential Associated
With Water Clean-Up

LAKES AND PONDS	POTENTIAL
Lake Pearl (Wrentham)	yes
Pepperell Pond (Pepperell)	yes
Peters Pond (Dracut)	yes
Pillings Pond (Lynnfield)	yes
Pondville Pond (Auburn)	yes
Pontoosuc Lake (Lanesborough and Pittsfield)	yes
Populatic Pond (Norfolk)	yes
Porter Lake (Springfield)	yes
Quacumquasit Pond (Brookfield and East Brookfield)	yes
Lake Quinsigamond (Worcester and Shrewsbury)	yes
Ramshorn Pond (Millbury, Sutton)	yes
Robbins Pond (East Bridgewater)	yes
Rockwell Pond (Leominster)	yes
Lake Rohunta (Orange, Athol, and New Salem)	yes
Rosemary Lake (Needham)	yes
Rubber Mill Pond (Easthampton)	yes
Lake Sabbatia (Taunton)	yes
Salisbury Pond (Worcester)	yes
Sandy Pond (Ayer)	yes
Sawmill Pond (Fitchburg, Westminster)	yes
Sherman Pond (Brimfield)	yes
Silver Lake (Bellingham)	yes
Silver Lake (Pittsfield)	no
Singletary Pond (Sutton and Millbury)	yes
South Pond (Savoy)	yes
Spy Pond (Arlington)	yes
Spectacle Pond (New Salem)	no
Stiles Reservoir (Spencer and Leicester)	yes
Stoneville Ponds, Upper and Lower (Auburn)	yes
Straits Pond (Hull and Cohasset)	yes
Tully Pond (Orange)	yes
Upton's Pond (Tyngsborough)	yes
Lake Waban (Wellesley)	yes
Walker Pond (Waltham)	yes
Walker Gordon Pond (Needham)	yes
Warner's Pond (Concord)	no
Lake Warner (Hadley)	yes
Watershops Pond (Springfield)	yes
South Wattupa Pond (Westport, Fall River)	yes
Waushakum Pond (Ashland and Framingham)	yes
East Waushakum Pond (Sterling)	yes
Whitmans Pond (Weymouth)	yes
White's Pond (Leominster, Lancaster)	yes
Willow Pond (Brookline)	yes
Windsor Lake (North Adams)	yes
Winning Pond (Billerica)	yes
Woods Pond (Lenox)	yes
Wyman Pond (Westminster)	yes
Wyola Lake (Shutesbury)	yes

Regional Overview: BERKSHIRE COUNTY

Berkshire County has more recreational land in acres than any other county in Massachusetts. However, poorly planned development may result in overtaxed recreational facilities. Sections 201 and 208 provide new opportunities for the development of recreation and open space in conjunction with wastewater treatment facilities and water cleanup activities.

A. Supply and Demand

Berkshire County leads the state in acreage devoted to recreation. According to the 1978 State Comprehensive Outdoor Recreation Plan, total of 296 sites, 107 are intensive recreation (high density, swimming pools, tennis courts, skating rinks); 113 are general recreation areas (bicycle path, picnic areas, boat ramps); 70 are natural areas (undeveloped cross-country, skiing, hunting) and 5 are historical/cultural sites. The majority of the areas are non-urban and larger than 10 acres. Berkshire County's critical facility needs are hiking, camping (site), cross-country motor biking, cross country skiing and nature walking. With the exception of camping sites, most of these are types of trails, and would have excellent multiple use opportunities when combined with wastewater treatment facilities.

B. Opportunities

Treatment Facilities

Potential multiple uses of treatment facilities include boat launch ramps on treatment plant sites; informal picnic areas on open spaces on the site of reseeded sludge beds; and hiking/bicycling trails on easements for interceptor lines.

There are nine completed wastewater treatment plants in Berkshire County. No new plants are being planned for the region. Eight different interceptor lines have multiple use recommendations, two of which are in the Step I facilities plan stage (proposed) and have excellent potential.

Table 6 on the following page ranks the recommendations made for wastewater treatment facilities and Figure 4 locates the projects. Of all the multiple-use opportunities for wastewater treatment facilities in Berkshire County, the systems in Clarksburg and Stockbridge have the most potential. Both of these towns are considering plans for new interceptors, which would travel cross country and be suitable for hiking/biking trails. At the present time there is little emphasis on the multiple use possibilities of these interceptors, but construction plans have not been drawn up so there is still time to include recreation plans.

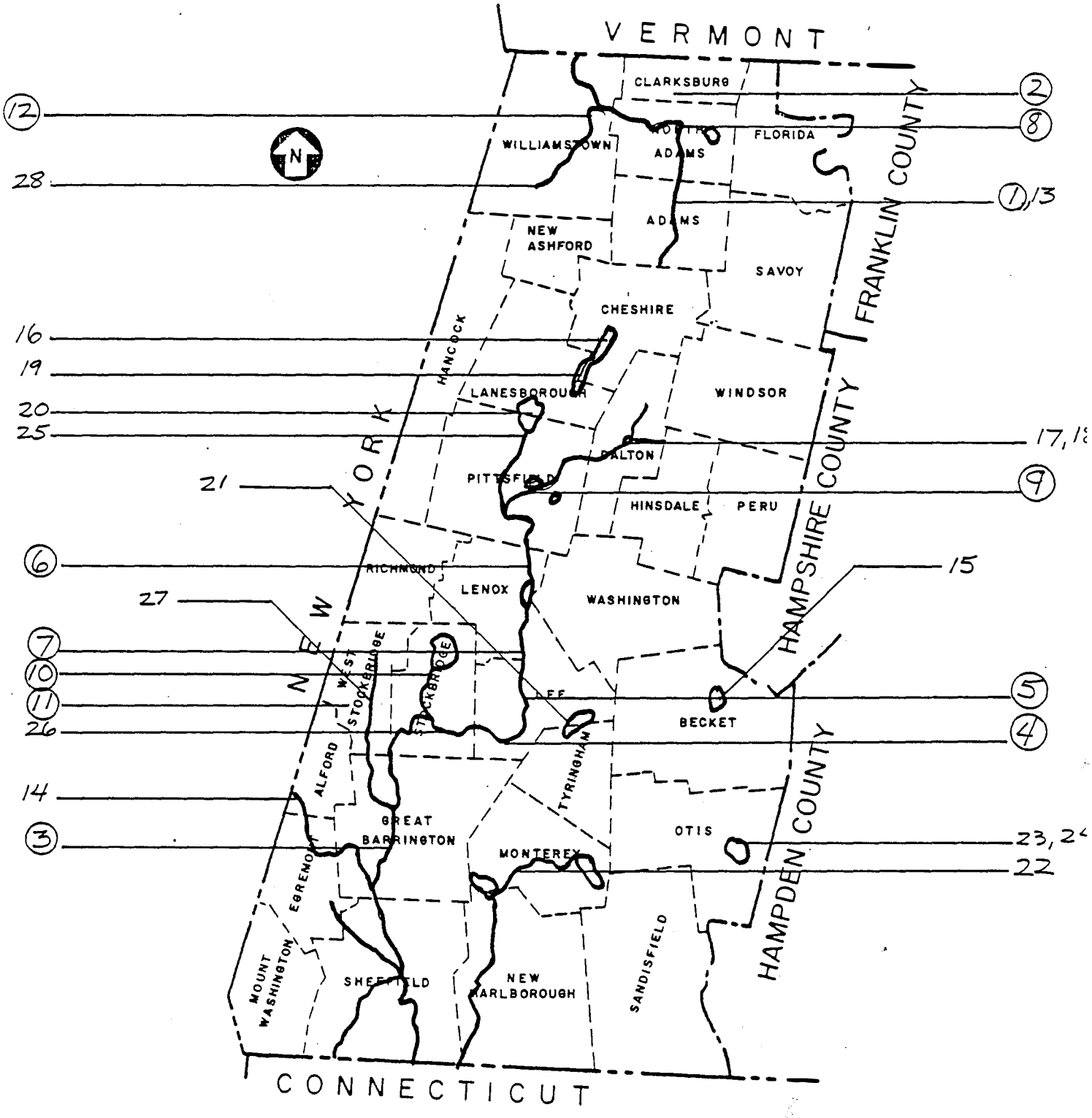
The main treatment plant in Adams also has good potential as there is an acre of open space (a reseeded sludge bed) adjacent to the Hoosic River that would be suitable for a picnic area and boat launch ramp. Lenox has an adandoned treatment plant site located very close to the border of the Housatonic River Valley Wildlife Management Area and would be a valuable addition to the area, as the site is predominantly wetland.

Table 6
Berkshire County Treatment Facilities

Potential Projects

TABLE 6

TOWN	HIGH	MEDIUM	LOW
ADAMS	1. Treatment Plant Open Space		
CLARKSBURG	2. Step I Facility Plan for interceptors		
GREAT BARRINGTON		3. Interceptor along East bank of Housatonic River	
LEE		4. Interceptor along Housatonic River	5. Treatment plant boat launch
Lenox	6. Abandoned plant site added to Wildlife Management Area	7. Treatment plant site open space for hard surface play	
NORTH ADAMS		8. Interceptor from Hillside Cemetery to Barryton School	
PITTSFIELD		9. Interceptor along East and West Branches of Housatonic River	
STOCKBRIDGE	10. Step I Facility Plan for interceptors		
WEST STOCKBRIDGE		11. Step I Facility Plan for interceptors	
WILLIAMSTOWN		12. Interceptor from Eph pond along Hoosic River	



Key

(1) treatment facility
13 polluted water body

See Table 6 and 7
for recommendations

Figure 4
Berkshire County
Recreation and Open Space Opportunities
Associated with Water Clean-Up

Polluted Water Bodies

There are many multiple use opportunities for recreation involving polluted water bodies. These include boating, swimming, fishing, picnic areas, camping, hiking/biking paths and boat launching ramps.

Twenty-two water bodies (including lakes, rivers and brooks) were investigated in Berkshire County and are ranked in Table 7 according to the following criteria: existing recreational facilities (town only or broader public, not private); other public ownership of property; accessibility to public; type of water pollution problem; and types of multiple-use opportunities.

The polluted water body with the most potential in Berkshire County is the Green River in Williamstown. The Conservation Commission in Williamstown has devised a plan for a Green River Linear Park, which would link several recreational facilities in the center of town. There is a strong town support of the project and it would be a valuable addition to the recreation facilities of Williamstown.

Other water bodies with highly ranked recommendations are Center Pond in Becket, the Cheshire Reservoir, Center Pond in Dalton, the Konkapot River and Big Pond in Otis. Two of these (Center Pond in Becket and Big Pond in Otis) have wetlands adjacent to them, which need protection from development. The Cheshire Reservoir has several public access ramps but expansion of the facilities to include swimming has been recommended. Center Pond in Dalton is centrally located but presently has no public access. The Konkapot River in Monterey also needs some sort of public access, as it is one of the better trout streams in Berkshire County.

C. Recommendations

The most frequent local recommendation is to Town Boards of Health to identify and correct failing septic systems which are contributing to water quality problems in lakes and rivers. Another is to regional planning boards to institute and support land use control programs (educational programs on phosphates, leaf control, dredging) for their polluted water bodies. The Berkshire Conservation District was also mentioned as a consultant to local farmers on conservation techniques which would reduce the amount of erosion along river banks and sedimentation in the rivers themselves.

Table 7
Berkshire County Polluted Water Bodies

Potential Projects

TOWN	HIGH	MEDIUM	LOW
ADAMS			13. Public access to the Hoosic River
ALFORD		14. Public access to the Green River	
BECKET	15. Wetland Zoning for Center Pond		
CHESHIRE	16. Swimming facilities for Cheshire Reservoir		
DALTON	17. Public access to Center Pond	18. Public access to Housatonic River	
LANESBOROUGH			19. Public access to Cheshire Reservoir 20. Public access to Pontoosuc Lake
LEE		21. Expansion of parking at Goose Pond	
MONTEREY	22. Public access to Konkapot River		
OTIS	23. Protection of wetland at Big Pond	24. Expansion of town beach at Big Pond	
PITTSFIELD			25. Expansion of facilities at Pontoosuc Lake
STOCKBRIDGE			26. Public access to Housatonic River
WEST STOCKBRIDGE		27. Public access to Williams River	
WILLIAMSTOWN	28. Green River Linear Park		

Regional Overview: FRANKLIN COUNTY

A. Supply and Demand

Franklin County ranks third in available recreational acreage per 1000 population (1100) according to the Massachusetts State Comprehensive Outdoor Recreation Plan. There are 78 intensive recreation areas, 110 general recreation areas, 112 natural areas and 14 historical/cultural sites. (See Mass. State Comprehensive Plan).

Although there is an abundance of available recreational lands, the State Comprehensive Outdoor Recreation Plan documents the need for expanded facilities, most notably for motorboating, sailing, canoeing, camping, fishing, ice skating, picnicking and swimming. It should be pointed out that much of this demand could be met through multiple use opportunities investigated in this report.

B. Opportunities

Opportunities centered around water quality improvement are of two primary types: 1) those associated with the cleanup of polluted water bodies; and 2) multiple use of treatment facilities for recreation sites. Multiple use facilities already exist around the county ranging from hiking/biking trails along interceptor easements to parks and gardens developed on lands surrounding wastewater treatment plants.

Treatment Facilities

Treatment facilities, in most cases, refer to three basic sewer system components: interceptor pipes, pumping stations, and treatment plants of several varieties. In Franklin County there are 13 wastewater treatment plants in operation at this time, and 4 communities have treatment facilities in the design and construction phases. These communities should consider multiple use opportunities to incorporate with proposed plans, since cost savings are greatest in the design and construction phases.

Table 8 prioritizes, on both a regional and community basis, the multiple use potential of publicly owned treatment facilities in Franklin County. The facilities are ranked according to their potential for development and use by the public, assuming that funding is available and that the communities involved are committed to the multiple use concept.

In all, five criteria are used to evaluate the facilities. These criteria are as follows:

a. Number of Owners of interceptor easement or right-of-way also, whether easements already allow public access.

b. Accessibility of interceptor route to the public.

c. Dimensions (length and width) of right-of-way.

TABLE 8

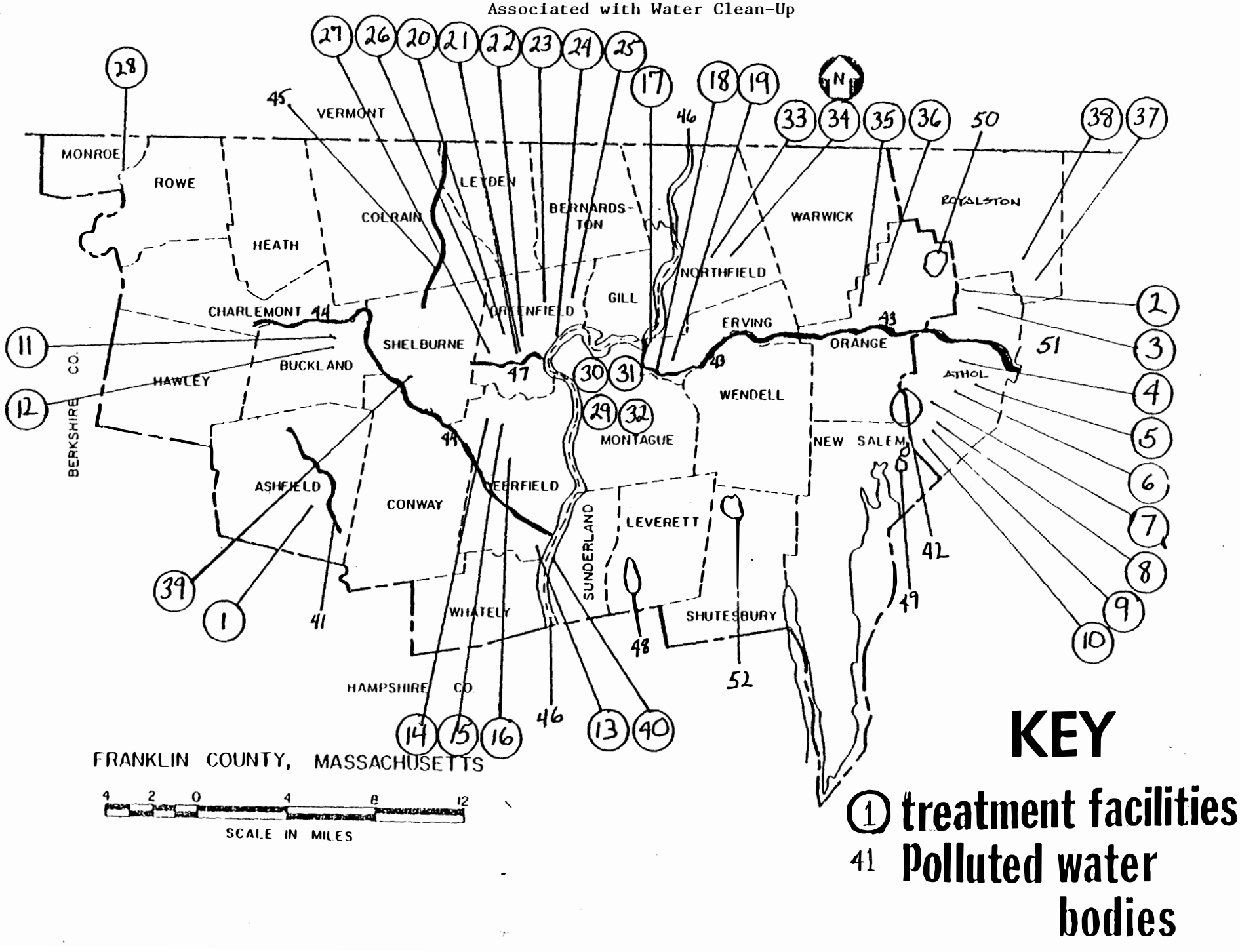
Franklin County Treatment Facilities: Potential Projects

Community	High	Medium-High	Medium	Medium-Low	Low
Ashfield			1. Proposed WWTP Step II/III		
Athol					2. Athol WWTP 3. South Main St. Interceptor 4. South Athol Rd. Interceptor 5. Exchange St. Interceptor 6. Main St. Interceptor 7. South St. Sander St. Interceptor 8. Linden Pk. Pump Sta. 9. Bickford Dr. Pump Sta. 10. South Athol Rd. Pump Sta.
Buckland				11. Buckland/ Shelburne WWTP	12. Buckland Interceptor
Deerfield			15. Blacksmith Brook Interceptor 16. Little Meadow Interceptor	13. South Deerfield WWTP	14. Old Deerfield WWTP
Erving			19. Pratt St. Force Main	17. Erving/WWTP 18. Millers Falls/Erving WWTP	
Greenfield	23. Proposed Step II Green River Interceptor 24. Mill Brook Interceptor			20. Greenfield WWTP	21. Cherry Rum Interceptor 22. Maple Brook Interceptor 25. Tyler Place Pump Sta. 26. Leyden Woods Rd. Pump Sta. 27. Montague City Rd. Pump Sta.
Monroe					28. Monroe WWTP
Montague		31. Proposed Montague Center Pump Station	30. First St. Pump Sta.	29. Montague WWTP	32. Popular St. Pump Sta.

Table 8 (continued)

Community	High	Medium-High	Medium	Medium-Low	Low
Northfield			33. Northfield WWTP 34. Northfield Interceptor		
Orange		36. Millers River Interceptor	35. Orange WWTP		
Royalston				37. Royalston WWTP	38. Royalston Interceptor
Shelburne		39. Shelburne Pump Sta.			
Sunderland			40. Sunderland WWTP		

Figure 5 Franklin County Recreation and Open Space Opportunities
Associated with Water Clean-Up



d. Location of interceptor. Interceptors located under paved roadways receive a low ranking.

e. Proximity of right-of-way to areas of recreational, historical, educational, or environmental significance.

Criteria for Treatment Plants and Pump Stations

a. available open space on site

b. access to water - e.g. boat launch, fishing

c. accessibility to the public

d. proximity to or linkages with areas of recreational, historical or environmental significance.

e. physical site compatible (e.g. not excessively steep slopes, etc.)

Of all the multiple use opportunities for wastewater treatment facilities in Franklin County, systems in Greenfield and Orange offer the greatest potential. In addition, proposed pump station facilities in Montague and an existing pump station in Shelburne offer relatively high potential for multiple use recreation plans.

The proposed Green River and Mill Brook interceptors show high potential for a bicycle and pedestrian pathway connecting both interceptors to form a north-south access to the town swimming pool. The proposed pump station in Montague Center offers access to fishing areas along the Sawmill River, which is stocked. Since the pump station is in the planning phase, local officials should investigate multiple use opportunities now. In addition, the Millers River Interceptor in Orange and the Shelburne Pump Station both received medium-high rankings (see Table 8) suggesting significant multiple use opportunities.

Polluted Water Bodies

Many recreational opportunities exist for polluted water bodies in Franklin County, provided that water quality is improved. Those opportunities are primarily those of boating, swimming, fishing, camping, picnicking, hiking and bicycling.

Eleven polluted water bodies were investigated in Franklin County and are ranked in Table 9 according to the following criteria: ownership, accessibility, specific pollution problems, and potential opportunities.

TABLE 9

Franklin County Polluted Water Bodies: Potential Projects

Town	Water Body	Existing Ownership/Accessibility	Pollution Problem	Opportunities	Rank.
Ashfield	41. South River	Good Access	Untreated domestic Waste	Fishing (Stocked)	Medium
Athol	42. Lake Rohunta 43. Millers River	Private Ownership/No Access Residential/Commercial Zoning	Undocumented Athol WWTP	Boating, Swimming, Fishing Linear Park Canoing	High
Buckland	44. Deerfield River		Raw Sewage/Effluent Discharge	Fishing, Swimming, Boating	High
Charlemont	44. Deerfield River	Private Ownership	Same as Above	Same as Above	High
Colrain	45. North River	Not Investigated	Treated Discharge From Kendall Fiber Products	Not Investigated	Not Ranked
Erving	46. Connecticut River 43. Millers River	Private, Undeveloped Lnads w/Steep Slopes Limited Access Limited Access	Upstream Discharge Orange WWTP Discharge	Limited Access Trails-Limited by Steep Slope	Low Medium
Gill	46. Connecticut River	Private, Good Access, Route 2	Occasional High Coliform Counts	Fishing, Swimming, Boating, Hiking Along Shore	High
Greenfield	47. Green River	Residential and Semi-public (Golf Course)	Effluent Discharge (Seasonal)	Limited by Steep Banks & Flooding	Low
Leverett	48. Leverett Pond	All Residential/No Public Access	Inadequate On-lot Septic Systems	Limited by Lack of Access	Low
Montague	46. Connecticut River 43. Millers River	Limited Public Access, Private Ownership Private Ownership/Some State Forest	Occasional High Coliform Counts Upstream Discharge	Fishing, Swimming, Boating Fishing, Swimming, Canoeing Hiking	Medium Medium

Table 9 (continued)

Town	Water Body	Existing Ownership/Accessibility	Pollution Problem	Opportunities	Rank
New Salem	42. Lake Rohunta	Good Access	Untreated Domestic Waste	Fishing(Stocked)	Mediu
Northfield	46. Connecticut River	Agricultural/Residential/State Wildlife Management Area	Occasional High Coliform	Boating, Fishing, Swimming Hiking, Picnicing	High
Orange	42. Lane Rohunta	Private Ownership/No Access	Undocumented	Boating, Fishing, Swimming	High
	50. Tully Pond	Forest/Agricultural Land Limited Access	Eutrophic Water Quality	Same as Above	Mediu
	43. Millers River	Mixed Uses, Good Access, Parking	Athol WWTP Discharge	Fishing, Canoing	Mediu
Phillipston	51. Beaver Brook	Mostly Wetlands	Fernald State Sch. Sewage Discharge	Wetland Education Observation	Mediu
	43. Millers River	State Owned Millers River Wildlife Management Area	Templeton WWTP Discharge	Limited, Passive Recreation Wildlife Observation	High
Royalston	43. Millers River	State Forest Lands, Good Access	Upstream Discharge	Canoing, Fishing, Hiking	High
	51. Beaver Brook	Residential, Agricultural, State Forest	Fernald State Sch. Sewage Discharge	Fishing, Trapping	Mediu
Shutesbury	52. Lake Wyola	Private Ownership, Public Beach Access	On-Site Septic Systems	Swimming, Fishing, Boating, Waterskiing	High
Sunderland	46. Connecticut River	Mixed Uses, Good Access	Deerfield River Discharge	Swimming, Fishing, Boating	High
Wendell	43. Millers River	Mostly Undeveloped, Boston & Main R.R. Railroad Obstructs Access	Orange WWTP Erving Paper Co.	Protection of Open Spaces	Low

Regional Overview: LOWER PIONEER VALLEY

With clean-up of Massachusetts waters, new open space and recreation opportunities are emerging. This same clean up increases shore line land values and development potential. The large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water. The purpose of this study is to identify recreation and open space opportunities in Massachusetts that can be expected to result from improved water quality and to establish a mechanism which assures that potential recreation and open space opportunities are analyzed in the planning of proposed treatment works.

A. Supply and Demand

According to the Massachusetts State Comprehensive Outdoor Recreation Plan, the Lower Pioneer Valley has an availability of recreational acreage at approximately 200 acres per 1000 population. There are 328 intensive recreation areas, 108 general recreation areas, 86 natural areas and 5 historical/cultural sites. (See Massachusetts State Comprehensive Plan)

The Massachusetts State Comprehensive Outdoor Recreation Plan documents the projected need for expanded facilities, most notably for picnicking, camping, motor and sail boating, swimming and snowmobiling. It should be pointed out that much of this demand could be met through multiple use opportunities investigated in this report.

B. Opportunities

Opportunities centered around water quality improvement are of two primary types: 1) those associated with the cleanup of polluted water bodies; and 2) multiple use of treatment facilities for recreation sites. Multiple use facilities already exist around the county ranging from hiking/biking trails along interceptor easements to parks and gardens developed on lands surrounding wastewater treatment plants.

Treatment Facilities

Treatment facilities, in most cases, refer to three basic sewer system components: interceptor pipes, pumping stations, and treatment plants of several varieties. In the Lower Pioneer Valley, there are 14 wastewater treatment plants in operation at this time and 3 communities have treatment facilities in the design and construction phases. These communities should consider multiple use opportunities to incorporate with proposed plans since cost savings are greatest in the design and construction phases.

Table 10 prioritizes, on both a regional and community basis, the multiple use potential of publicly owned treatment facilities in the Lower Pioneer Valley. The facilities are ranked according to their potential for development and use by the public, assuming that funding is available and that the community involved are committed to the multiple use concept. Figure 6 locates these facilities.

In all, five criteria are used to evaluate the interceptors. These criteria are as follows:

TABLE 10

Lower Pioneer Valley Treatment Facilities: Potential Projects

City/Town	High	Medium/High	Medium	Medium/Low	Low
Agawam	1.A. Long Meadow Sewer Force Main		1. Three mile Brook force main 2. Main St. Siphon		
Amherst			5. South Amherst Interceptor		3. Amherst WWTP 4. North Amherst Interceptor
Belchertown		6. Belchertown Interceptor	7. Belcher-town State School WWTP		
Chicopee		9. South Hadley Line Intercepto 12. Proposed Interceptor #2	10. Granby Rd. Inter-ceptor 14. Chico-pee WWTP 18. Pump Sta. #4	13. Proposed Interceptor #3	8. Proposed Interceptor #1 11. Interceptor #3 15. Pump Sta. #1 (proposed) 16. Pump Sta. #2 17. Pump Sta. #3 19. Pump Sta. #5 20. Pump Sta. #6 21. Pump Sta. #7 22. Pump Sta. #8 23. Pump Sta. #9 24. Pump Sta. #10 25. Pump Sta. #11 (proposed)
Easthampton		27. White Brook Interceptor 28. Mahan River Interceptor 29. Pump Sta. #1		26. Easthampton WWTP 31. Pump Sta. #3	30. Pump Sta. #2
East Longmeadow			32. Pecousic Brook Valley Interceptor	33. Pecousic Brook Interceptor 34. Mill River Valley Interceptor 35. Overlook Rd. Interceptor	36. Pump Sta. #1 37. Pump Sta. #2 38. Pump Sta. #3

Table 10 (continued)

City/Town	High	Medium/High	Medium	Medium/Low	Low
Hadley		39. Hadley WWTP			
Hatfield			40. Hatfield WWTP proposed Step II)		41. Pump Sta #1 (proposed) 42. Pump Sta #2 (") 43. Pump Sta #3 (") 44. Pump Sta #4 (")
Holyoke		46. Smith's Ferry Interceptor (proposed) 47. Highland Interceptor 50. South Interceptor 51. Springdale Pump Sta.	52. Highland Pump Sta. 57. Jones Ferry Pump Sta.	48. Pleasant St. Interceptor	45. Holyoke WWTP 49. Front St. Interceptor 51. Smiths' Ferry Pump Sta. (proposed) 53. Mosher St. Pump Sta. 54. Cabot St. Pump Sta. 55. Jackson St. Pump Sta.
Huntington			58. Huntington WWTP 59. West Interceptor	60. North Interceptor	
Longmeadow			63. Longmeadow Brook Interceptor		61. North Interceptor 62. South Interceptor 64. Wheelmeadow Brook Interceptor 65. Pump Sta. #1
Ludlow	66. Ludlow Abandoned WWTP 67. Higherbrook Interceptor 68. Electric Park Interceptor (proposed)	69. Pump Sta. #1 (proposed)			
Monson	70. Monson WWTP (Abandoned Fall 1980)				71. Interceptor #1

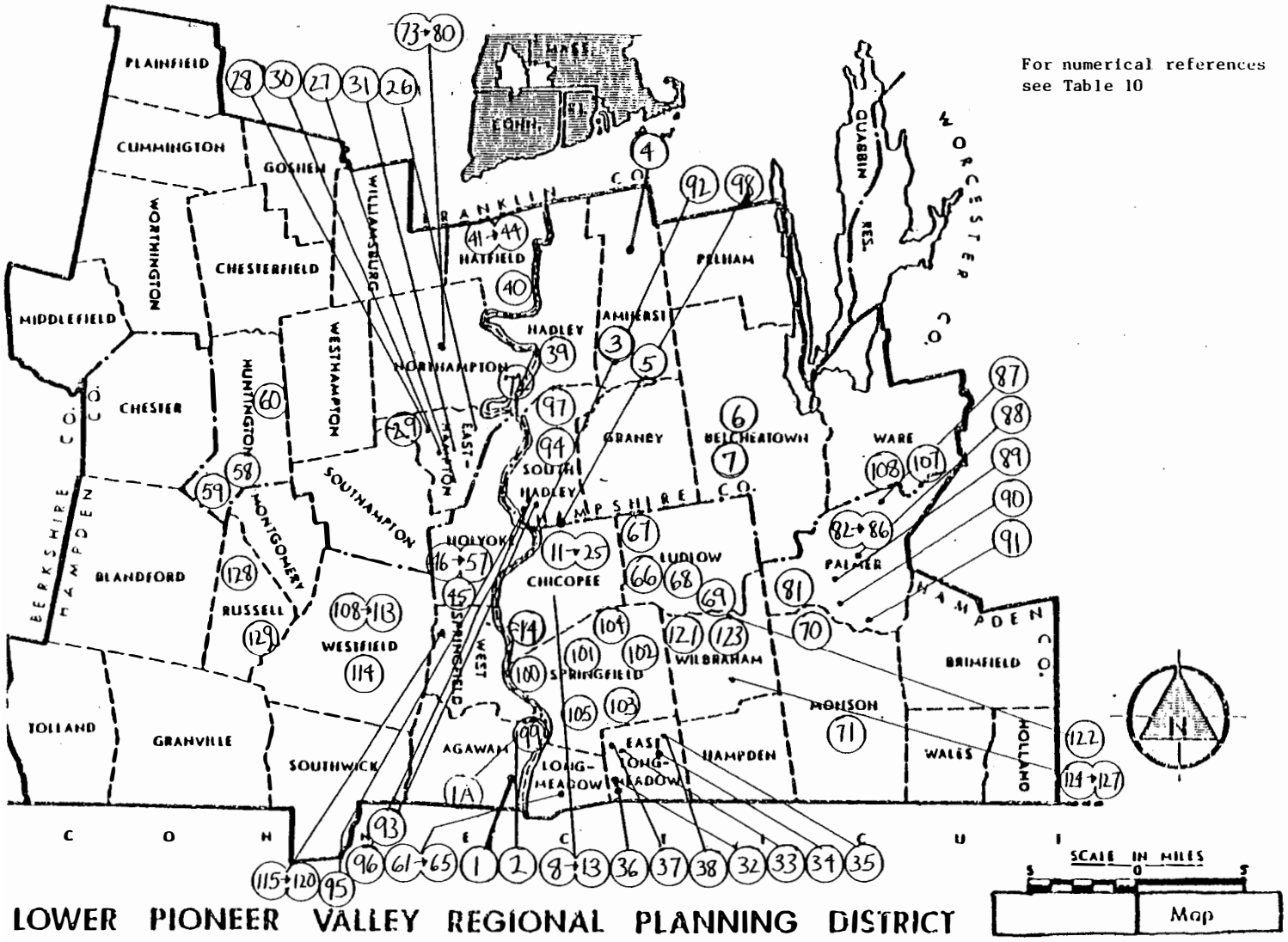
Table 10 (continued)

City/Town	High	Medium/High	Medium	Medium/Low	Low
Northampton		75. Pump Sta. #3 (proposed) 78. Maine's Field Interceptor (proposed) 80. Interceptor #4 (proposed)	72. Northampton WWTP 76. Pump Sta #4 (proposed) 77. Interceptor #1 (proposed) 79. Interceptor #3 (proposed)		73. Pump Sta. #1 74. Pump Sta. #2
Palmer		81. Palmer WWTP (Step III) 84. Interceptor #3 85. Interceptor #4 90. Pump Sta. #4 91. Pump Sta. #5	82. Interceptor #1 83. Interceptor #2		86. Interceptor #5 87. Pump Sta. #1 88. Pump Sta. #2 89. Pump Sta. #3
South Hadley	93. Falls Interceptor 94. Center Falls Interceptor	95. Interceptor #3 98. Proposed Pump Sta.	96. Taylor St. Pump Sta.		92. S. Hadley WWTP 97. Stony Brook Pump Sta.
Springfield		99. Bondi Island WWTP 104. Indian Orchard Pump STa.	101. Main Interceptor 103. South Branch Interceptor	102. North Branch Interceptor	100. Conn. River Interceptor 105. York St. Pump Sta.
Ware		106. West Bank Interceptor		107. Ware WWTP	
Westfield					108. N.Y. Central Interceptor 109. Meadow Rd. Interceptor 110. St. Paul St. Interceptor 111. Pochassio Rd. Interceptor 112. South St. Interceptor #1 113. South St. Interceptor #2 114. Westfield WWTP

Table 10 (continued)

City/Town	High	Medium/High	Medium	Medium/Low	Low
West Springfield		116. River St. Interceptor 120. Riverdale St. Pump Sta.	115. N.Y. Central Interceptor	117. Westfield St. Pump Sta. 118. Agawam Bridge Pump Sta.	119. New Bridge Pump Sta.
Wilbraham			121. Primary Interceptor 122. Boston Rd. Interceptor 123. Wilbraham WWTP 125. River Rd. Pump Sta.		124. Cottage Ace. Pump Sta. 126. Dudley Court Pump Sta. 127. Wellfleet Drive Pump Sta.
Russell			129. Proposed Woronco WWTP Step II	128. Russell WWTP	

Figure 6 Recreation and Open Space Opportunities Associated with Treatment Facilities



b. Accessibility of interceptor route to the public.

c. Dimensions (length and width) of right-of-way.

d. Location of interceptor. Interceptors located under paved roadways receive a low ranking.

e. Proximity of right-of-way to areas of recreational, historical, educational, or environmental significance.

Criteria for Treatment Plants and Pump Stations

a. available open space on site

b. access to water - e.g. boat launch, fishing

c. accessibility to the public

d. proximity to or linkages with areas of recreational, historical or environmenatl significance

e. physical site compatible (e.g. not excessively steep slopes, etc.)

Of all the multiple use opportunities for wastewater treatment facilities in the Lower Pioneer Valley, systems bordering the Connecticut River offer, in most cases, the greatest potential. The Hadley WWTP and the Bondi Island Regional WWTP are two facilities on the Connecticut River showing high potential for multiple use. In addition, the abandoned Ludlow WWTP and the soon-to-be-abandoned Monson WWTP show considerable potential for adoptive re-use as recreational facilities.

Trail systems over interceptor easements are highly ranked for Ludlow, South Hadley, Northampton, West Springfield, Holyoke and several other communities. In many cases, these trails might serve as linkages between treatment, recreation, and municipal facilities.

Polluted Water Bodies

Many recreational opportunities exist for polluted water bodies in the Lower Pioneer Valley, provided that water quality is improved. Those opportunities are primarily those of boating, swimming, fishing, camping, picnicking, hiking and bicycling.

Polluted water bodies were investigated in the Lower Pioneer Valley ranked in Table 11 according to the following criteria: ownership, accessibility, specific pollution problems, and potential opportunities. Figure 7 locates these facilities.

TABLE 11

Lower Pioneer Valley Polluted Water Bodies: Potential Projects

Community	Water Body	Existing Ownership/Accessibility	Pollution Problem	Opportunities	Ranking
Agawam	130. Westfield River	Residential/Commercial State Park	Runoff/WWTP	Swimming/Boating	Medium
	131. Connecticut River	County owned 8000' Frontage	Bondi's Island WWTP	Boating, Fishing Sailing	High
Amherst	132. Factory Hollow Pond (Puffer's Pond)	Private, Public Access	On-site Septic Systems, Runoff	Swimming	Medium
Belchertown	133. Lake Metacomet	Private, Public access	Low Water, on-site Septic systems	Swimming, Boating	Medium
	133. Arcadia Lake	Private, Good Public Access	Same as above	Swimming, Boating	Medium
Chicopee	136. Chicopee River	Residential/Commercial/Industrial	Industrial Discharge Sewer Outfalls	Fishing, Boating	Medium
	131. Connecticut River	Residential/Commercial/Industrial	Chicopee WWTP Sewer Outfalls	Fishing, Boating	Medium
Easthampton	137. Harris/ Bassett Brooks	Private/Residental	Easthampton Landfill Leaching	Fishing, Bathing	Low
	138. Lower Mill Pond	Residential/Industrial	Mesotrophic	Swimming	Medium
	139. Rubber Thread Pond	Residential/Industrial	Mesotrophic	Swimming	Medium
	140. Nashawannuck Pond	Town Beach/Nonnotuck Park	Eutrophic	Swimming Ecology Study	High
	141. Oxbow Pond	Private, Public Access/Marina	Agricultural run-off, Non-point sources	Boating, Sailing, Fishing	High
Granby	142. Forge Pond	Town Land Excellent Access	Eutrophic	Fishing, Swimming	High
	143. Aldrich Lake	State Ownership, Excellent Access	Eutrophic	Fishing, Swimming	High

Table 11 (continued)

Community	Water Body	Existing Ownership/Accessibility	Pollution Problem	Opportunities	Ranking
Goshen	135. Damon Pond	Private, Limited Public Access	On-site Septic Systems	Boating, Swimming	Medium
	144. Hammond Pond	Private, Limited Public Access	On-site Septic Systems	Boating, Swimming	Medium
Hadley	145. Lake Warner	Residential/Agricultural Good Access	Eutrophic	Swimming	Medium
	131. Connecticut River	Residential/Agricultural Some Access	Local WWTP's	Boating, Fishing, Swimming	Medium
Hatfield	146. Great Pond	Residential/Agricultural	Sewage Discharge Agricultural Runoff	Fishing, Swimming	Medium
	147. Mill River	Residential/Agricultural	Sewage Discharge	Fishing	Medium
	131. Connecticut River	Agricultural Boat Access	Sewage Discharge	Boating, Fishing, Swimming	High
Holyoke	131. Connecticut River	Residential/Commercial/Industrial/Railroad	Sewage Discharge Canal Discharge	Boating, Fishing, Swimming	Medium
Huntington	148. Norwich Pond	Residential, Limited Public Access	Non-point Sources	Fishing, Swimming	Medium
	130. Westfield River (West Branch & Main Stem)	Residential	Sewage Discharge	Fishing, Canoeing	Medium
	130. Westfield River (Middle Branch)	Residential, Knightville Dam, Littleville Dam, Gardener State Park	Intermittent Water Quality Degradation	Fishing, Caoneing, Hydrology Study	High
Longmeadow	131. Connecticut River	Wetlands, Wildlife Refuge, Residential	Upstream Discharge	Boating, Fishing, Ecology Study	High
Ludlow	136. Chicopee River	Residential	Sewer Discharge On-site Septic Systems	Fishing, Boating	Medium
Montgomery	130. Westfield River	Residential, Railroad, Steep Slopes, Limited Access	Upstream Discharge	Canoeing	Low
Northampton	149. Mill River	Residential/Commercial/Industrial/ Agricultural Open Space	Upstream Sewage Discharge Non-Point Sources	Swimming, Fishing	High
	131. Connecticut River	Agricultural Floodplain Good Access Potential	Sewage Discharge Agricultural Runoff	Boating, Sailing, Water Skiing, Fishing, Swimming	High

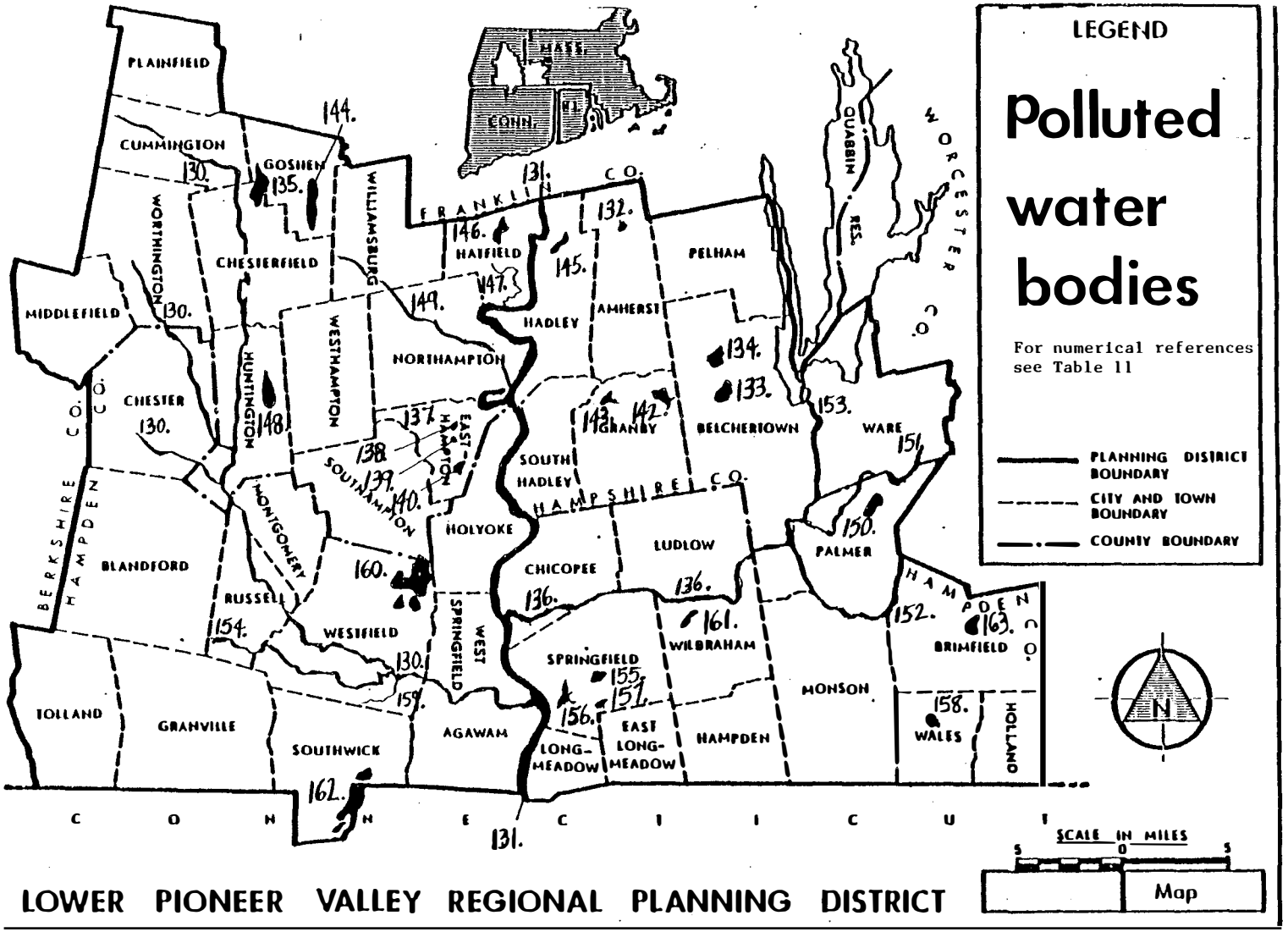
Table 11 (continued)

Community	Water Body	Existing Ownership/Accesibility	Pollution Problem	Opportunities	Ranking
Palmer	150. Forest Lake	Residential/Agricultural Publc Access	Eutrophic	Swimming, Fishing	High
	151. Ware River	Residential/Agricultural	Ware WWTP	Fishing	Medium
	152. Quaboag River	Residential/Agricultural	Intermittent Water Quality Degradation	Fishing, Swimming	Medium
	153. Swift River	Agricultural	Upstream Discharge	Fishing, Swimming	Medium
Russell	130. Westfield River	Residential/Industrial Steep Slope Limited Access	Sewage Discharge Industrial Waste	Fishing, Swimming	Low
	154. Little River	Residential/Municipal Steep Slopes Limited Access	Intermittent Water Quality Degradation	Fishing	Medium
South Hadley	131. Connecticut River	Agricultural/Industrial Open Space	Easthampton WWTP Sewer Outfalls	Boating, Fishing, Swimming	High
Springfield	155. 5 Mile Ponds	Residential/Industrial Good Public Access	Mesotrophic	Swimming	Medium
	156. Watershop Pond	Parks, Excellent Access	Road Runoff, Storm Runoff, Mesotrophic	Swimming	High
	157. Porter Lake	Excellent Access Forest Park	Mesotrophic	Swimming	High
	136. Chicopee River	Limited Access	Industrial Discharge Storm Runoff	Boating, Fishing	High
	131. Connecticut River	Limited Access	Industrial and Bondi Island WWTP discharges	Trail along Interceptor	High
Wales	158. Lake George	Small Public Beach Residential	Moderately Eutrophic Non-point Sources Septic Failure	Expand Beach for Swimming, Boating	High
Ware	151. Ware River	Residential/Agricultural/Forest/ Open Space	Hardwick WWTP Ware WWTP Industrial Discharge	Fishing, Canoeing, Ecology Study	Medium
Westfield	130. Westfield River	Residential/Commercial/Flood Plain	Sewage Industrial Discharge	Fishing, Swimming	Medium
	154. Little River	Residential/Agricultural/Forest/ Stanley Park	Industrial Discharge	Fishing, Swimming	Medium
	159. Great Brook	Residential/Agricultural	On-site Septic Systems	Fishing	Medium
	160. Hampton Ponds	Residential/State Park, Excellent Access	On-site Septic Systems	Motorboating, Fishing, Swimming, Sailing, Ecology Study	High

Table 11 (continued)

Community	Water Body	Existing Ownership/Accessibility	Pollution Problem	Opportunities	Ranking
West Springfield	131. Connecticut River	Residential/Commercial/Open Space	Bondis' Island WWTP	Boating, Fishing	High
	130. Westfield River	Residential/State Park/Fairgrounds Excellent Access	Northeast Utilities Generating Plant Upstream Discharge Runoff	Boating, Fishing	High
Wilbraham	161. 9 Mile Pond	Residential/Commercial Limited Access	Mesotrophic	Swimming	Medium
	136. Chicopee River	Residential/Commercial/Industrial	Industrial Discharge, Eutrophic	Boating	Medium
Williamsburg	149. Mill River	Residential/Open Space	Untreated Sewage	Fishing, Bathing	Medium
Southwick	162. Congamond Ponds	Excellent Access/Marinas	Eutrophic On-site Septic Systems	Boating, Swimming, Fishing	High
Brimfield	163. Sherman Pond	Excellent Access	On-site Septic System	Fishing, Swimming	High

Figure 7 Recreation and Open Space Opportunities Associated with Water Clean-Up



Regional Overview: Montachusett

With clean up of Massachusetts waters, new open space and recreation opportunities are emerging. This same clean up increases shoreline land values and development potential. The large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water. The purpose of this study is to identify recreation and open space opportunities in Massachusetts that can be expected to result from improved water quality and to establish a mechanism which assures that potential recreation and open space opportunities are analyzed in the planning of proposed treatment works.

A. Supply and Demand

The Montachusett Area ranks fifth in available acres of recreation per capita (.32 acres per person) according to the Massachusetts State Comprehensive Outdoor Recreation Plan. There are 89 intensive recreation areas, 126 general recreation areas and 122 natural areas. (see Mass. State Comprehensive Plan)

The State Comprehensive Outdoor Recreation Plan documents the need for additional recreation areas, most notably for swimming, power boating, picnicking and fishing. Much of this demand could be met through multiple use opportunities investigated in this report.

B. Opportunities

Opportunities centered around water quality improvement are of two primary types: 1) those associated with the cleanup of polluted water bodies; and 2) multiple use of treatment facilities for recreation sites. Multiple use facilities already exist around the country, ranging from hiking/biking trails along interceptor easements to parks and gardens developed on lands surrounding wastewater treatment plants.

Treatment Facilities

Treatment facilities, in most cases, refer to three basic sewer system components: interceptor or sewer pipes, pump stations and treatment plants of several varieties. In the Montachusett Area, there are 8 wastewater treatment plants in operation at this time and 4 of these plants have treatment facilities in the design and construction phases for upgrading or replacement. These communities should consider multiple use opportunities to incorporate with recreation plans since cost savings are greatest in the design and construction phases. There are some 28 pump stations and over 150 miles of sewers in the Montachusett Region.

Table 12 prioritizes, on both a regional and community basis, the multiple use potential of publicly owned treatment facilities

in the Montachusett Area. The facilities are ranked according to their potential for development and use by the public, assuming that funding is available and that the communities involved are committed to the multiple use concept. The locations of each project are shown in Fig. 8.

In all, five criteria are used to evaluate the interceptors. These criteria are as follows:

a. Number of owners of interceptor easements or rights-of-way;

b. Accessibility of interceptor route to the public;

c. Dimensions (length and width) of right-of-way;

d. Location of interceptor. Interceptors located under paved roadways receive a low ranking.

e. Proximity of right-of-way to areas of recreational, historical, educational, or environmental significance.

Criteria for Treatment Plants and Pump Stations

a. available open space on site

b. access to water - e.g. boat launch, fishing

c. accessibility to the public

d. proximity to or linkages with areas of recreational, historical or environmental significance

e. physical site compatible (e.g. not excessively steep slope etc.)

One of the best examples of multiple use opportunities for wastewater treatment facilities in the Montachusett area are in Winchendon and Ayer. The Winchendon Wastewater Treatment Plant has good potential for open space as a wildlife feeding area. In Ayer, the Shirley Road Phase II pump station and force main can be used as a small park and hiking trail system. This proposed path system would link various existing recreational areas in the Town, while a wildlife food growing growing area at the Winchendon plant would provide a resource for the existing Wildlife Management area.

Other good examples of multiple use opportunities associated with wastewater treatment facilities are: 2 existing pump stations, 2 proposed pump stations, and 1 existing and1 proposed interceptor in Ayer; 2 interceptors in Clinton; the Gardner Wastewater Treatment Plant in Templeton; 2 pump stations and 2 interceptors in Gardner; a new treatment plant and interceptor in Leominster; the Baldwinville treatment plant and 2 interceptors in Templeton.

Table 12 Montachusett Treatment Facilities: Potential Projects

Town	High	Medium	Low
Ayer	(1) Proposed Phase II Shirley Rd. pumping station - small park (2) Proposed Phase II Shirley Rd. Fitchburg Rd. force main - hiking/biking trail	(3) Groton/Harvard Rd. pump station - park benches vehicle pull-over (4) Existing pump station #3 small park and trail system (5) Proposed Central Ave. pumping station - small craft launch (6) Existing James Brook Interceptor and proposed extention - nature and hiking trail	(7) Wastewater treatment plant under construction - small park or picnic area (8) Main pumping station-small park (11) Proposed main pumping station - small park (12) Existing Grove Pond interceptor - pedestrian walkway (14) Proposed Phase III interceptors - hiking nature trails (15) Proposed connecting force main - pedestrian trail (16) Proposed Fitchburg Rd. trunk sewer - hiking trail
Clinton		(17) MDC and Counterpane Brook interceptors pedestrian walking loop	(18) Treatment and plant outfall-fishing access (19) Siphon and ejector station-fishing access (20) Gorham to High St. force main - fishing access and nature trail

Table 12 (continued)

TOWN	HIGH	MEDIUM	LOW
Fitchburg			(21) "East" waastewater treatment plant - canoe launch (22) Main trunk sewer - Nashua River - trail or pedestrian walkway
Gardner		(23) Wastewater treatment plant (in Templeton) open space, Otter River Wetlands Protection (24) Pearl St. pump stations (2)-small parks (25) Main interceptor -Otter River Wetlands nature trail (26) Racette Ave. sewer - neighborhood trail	(27) Perley Brook pump station-passive recreation (28) Heywood Hospital pump station - passive recreation
Lancaster			(29) Mill St. pump station-rest area, small park
Leominster		(30) New treatment plant and Fall Brook interceptor-passive recreation, Nashua River Greenway	(31) Lunenburg sewer easement-local hiking trail (32) Whitney St. interceptor-passive recreation and park
Templeton		[Wastewater treatment plant serving Gardner and East Templeton - nature and wetlands study see under Gardner #23] (33) Baldwinville wastewater treatment plant-nature study area	

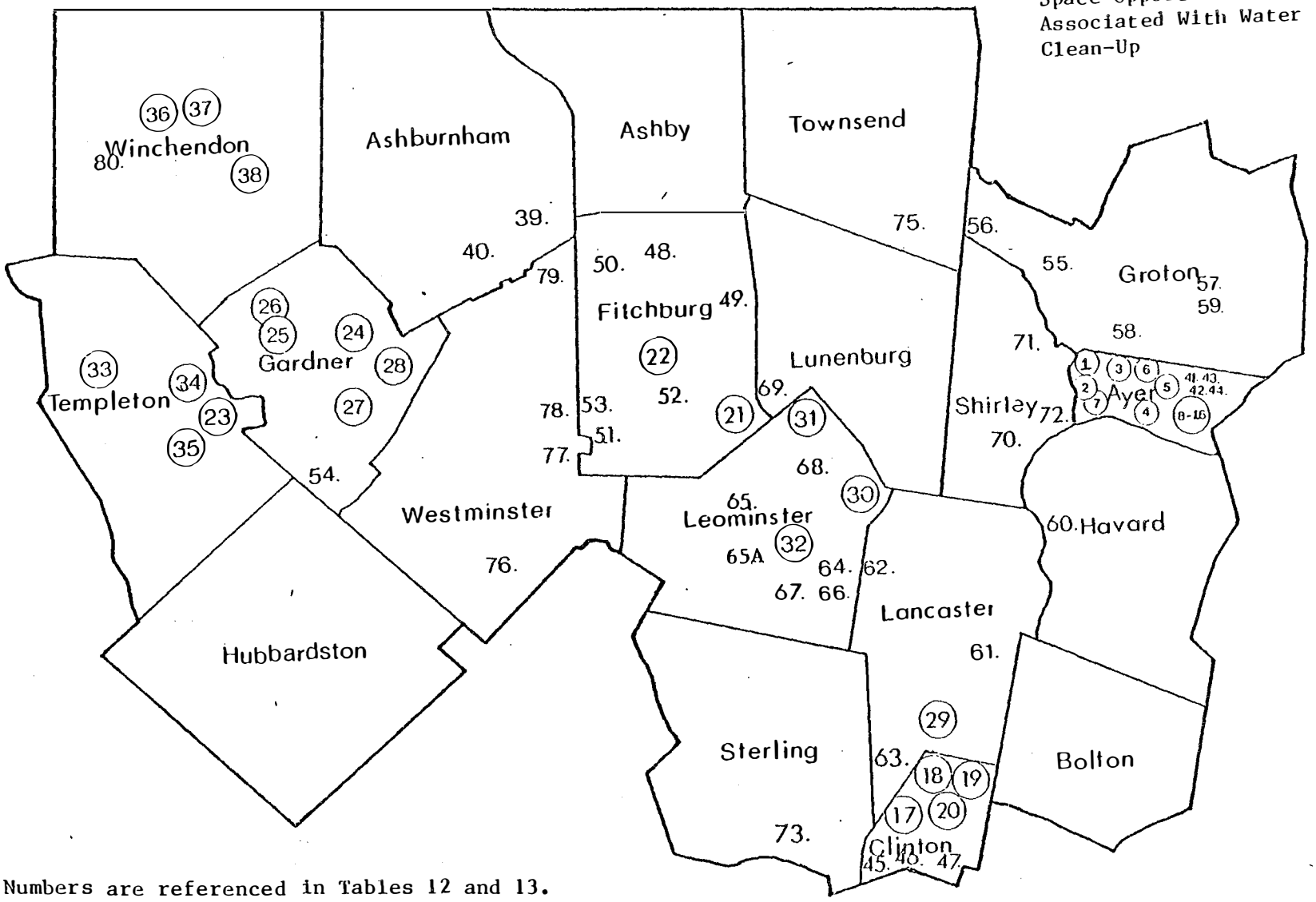
Table 12 (continued)

TOWN	HIGH	MEDIUM	LOW
Templeton (continued)		(34) Otter River interceptor, Baldwinville-hiking trail (35) Main St. interceptor to Gardner plant - hiking trail	
Winchendon	(36) Treatment plant-wildlife propogation (37) Main interceptor - hiking trail to wildlife management area.		(38) Ash St. pumping station-small park

THE MONTACHUSETT REGIONAL PLANNING AREA

Figure 8

Montachusett Recreation and Open Space Opportunities Associated With Water Clean-Up



Numbers are referenced in Tables 12 and 13.
Circled numbers indicate a potential recreation project at a treatment facility.
Other numerals are polluted bodies of water with recreation potential.

Polluted Water Bodies

Many recreational opportunities exist for polluted water bodies in the Montachusett Area provided that water quality is improved. Those opportunities are primarily those of boating, swimming, fishing, and picnicking.

Thirty-five (35) water bodies were investigated in the Montachusett Region and ranked in Table 13 according to the following criteria: ownership, accessibility, specific pollution problems, and potential opportunities.

Water bodies with highly ranked opportunities in the Montachusett Region include several water bodies of regional importance. The Nashua River, North and South Branches and Mainstem, Phillips Brook, and the Squannacook River. Several lakes, ponds, and streams which are listed in Table 13 have a high recreation potential for local use. The recommended projects are located in Figure 8.

C. Recommendations

In respect to the recreation opportunities identified for polluted water bodies and sewage treatment facilities, specific recommendations are made in the town by town assessments below. In addition to these specific recommendations, it should also be pointed out that local town Boards of Health should identify and attempt to correct failing septic systems and treatment facilities which are contributing to water quality problems in lakes, ponds and rivers. It is also recommended that local planning boards institute land-use controls and programs to educate the public about water quality in problem areas.

Table 13 Montachusett Polluted Water Bodies: Potential Projects

TOWN	HIGH	MEDIUM	LOW
Ashburnham	(39) Phillips Brook -fishing and nature trails (40) Whitman's River - fishing, boating, boat ramp		
Ayer	(41) Nashua River - greenbelt, canoeing (42) Sandy and Fletcher Ponds-swimming, fishing, boating	(43) James Brook-nature/ hiking trail, neighberhood park (44) Nanacoicus Brook-greenbelt open space	
Clinton	(45) South Nashua River-greenway-fishing (46) South Meadow, Mossy and Coachlace Ponds-swimming, boating and fishing		(47) Counterpane Brook-pedestrian trail
Fitchburg	(48) Fululah Brook, Green's Pond and Putnam Pond-greenbelt, nature trail, fishing (49) Baker Brook-greenbelt, urban parks improvement (50) Phillips Brook-greenbelt, park improvement	(51) Sawmill Pond and Flag Brook-green space, fishing (52) North Nashua River-downtown river front park	(53) Whitman River-park, fishing
Gardner	(54) Dunns Pond-family park, fishing, ice skating		
Groton	(55) Nashua River-passive recreation, parks, boating, fishing, nature study, open space preservation (56) Squannacook River-fishing, swimming, boating, shoreline protection	(57) Baddacook Pond-fishing, canoeing	(58) James Brook-nature trail and parks (59) Whitney's (cow) and Jack (duck) Ponds-fishing swimming and boating

Table 13 (continued)

TOWN	HIGH	MEDIUM	LOW
Harvard	(60) Nashua River-boating and greenway aquisition		
Lancaster	(61) Nashua River: North Branch, South Branch and Main Stem-swimming, fishing, boating, greenway	(62) White's Pond-fishing, boating (63) Four Ponds-fishing, public park	
Leominster	(64) N. Nashua River-passive recreation, greenway, fishing (65) Rockwell Pond-boating, fishing (65A) Barretts Pond - swimming	(66) White's Pond-fishing, boating (67) Fall Brook-fishing (68) Monoosnoc Brook-park, walkway	
Lunenburg		(69) Baker Brook-cross country ski trail-picnic area	
Shirley	(70) Catacoonamug Brook-park and trails (71) Squannacook River-fishing and canoeing	(72) Nashua River-open space	
Sterling	(73) East Waushacum Pond-fishing, swimming		
Templeton			(74) Beaver Brook-fishing
Townsend	(75) Squannacook River-fishing, boating, swimming		(78) Whitman River-open space, fishing
Westminster	(76) Wyman Pond - fishing, boating and swimming	(77) Sawmill Pond-greenspace fishing	(79) Phillips Brook-greenspace and fishing
Winchendon	(80) Millers River - swimming boating and fishing		

REGIONAL OVERVIEW: CENTRAL MASSACHUSETTS

With clean up of Massachusetts waters, new open space and recreation opportunities are emerging. This same clean up increases shore line land value and development potential. The large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water. The purpose of this study is to identify recreation and open space opportunities in Massachusetts that can be expected to result from improved water quality and to establish a mechanism which assures that potential recreation and open space opportunities are analyzed in the planning of proposed treatment works.

A. Supply and Demand

Central Massachusetts ranks fifth in available acres of recreation per capita (.29 acres) according to the Massachusetts State Comprehensive Outdoor Recreation Plan. There are 412 intensive recreation areas, 263 general recreation areas and 356 natural areas. (see Mass. State Comprehensive Plan)

The State Comprehensive Outdoor Recreation Plan documents the need for additional recreation areas, most notably for swimming, power boating, hiking, bicycling, tennis and golf. Much of this demand could be met through multiple use opportunities investigated in this report.

B. Opportunities

Opportunities centered around water quality improvement are of two primary types: 1) those associated with the cleanup of polluted water bodies; and 2) multiple use of treatment facilities for recreation sites. Multiple use facilities already exist around the country, ranging from hiking/biking trails along interceptor easements to parks and gardens developed on lands surrounding wastewater treatment plants.

Treatment Facilities

Treatment facilities, in most cases, refer to three basic sewer system components: interceptor pipes, pump stations and treatment plants of several varieties. In Central Massachusetts, there are 12 wastewater treatment plants in operation at this time and 2 communities have treatment facilities in the design and construction phases. These communities should consider multiple use opportunities to incorporate with proposed plans since cost savings are greatest in the design and construction phases.

Table 14 prioritizes, on both a regional and community basis, the multiple use potential of publicly owned treatment facilities in Central Massachusetts. The facilities are ranked according to their potential for development and use by the public, assuming that funding is available and that the communities involved are committed to the multiple use concept. Each project is located in Figure 9.

In all, five criteria are used to evaluate the interceptors. These criteria are as follows:

a. Number of owners of interceptor easements or rights-of-way;

b. Accessibility of interceptor route to the public;

c. Dimensions (length and width) of right-of-way;

d. Location of interceptor. Interceptors located under paved roadways receive a low ranking.

e. Proximity of right-of-way to areas of recreational, historical, educational, or environmental significance.

Criteria for Treatment Plants and Pump Stations

a. available open space on site

b. access to water - e.g. boat launch, fishing

c. accessibility to the public

d. proximity to or linkages with areas of recreational, historical or environmental significance

e. physical site compatible (e.g. not excessively steep slope etc.)

One of the best examples of multiple use opportunities for wastewater treatment facilities in Central Massachusetts is Northbridge. The Wastewater Treatment Plant has good potential for recreational development serving as a rest stop and picnic area. This site is also strategically located at the halfway point of a proposed path which further adds to its utility as a resting station. Also, Northbridge's interceptors offer an excellent opportunity for the development of a multiple use path system for hiking, jogging, bicycling and cross country skiing. This proposed path system would not only parallel the Mumford and Blackstone Rivers, it would also link various existing recreational areas in the Town.

Other good examples of multiple use opportunities associated with wastewater treatment facilities are: the North Brookfield Wastewater Treatment Plant, the Spencer pump station, the Sturbridge pump station, and the Mumford River interceptor in Douglas.

Polluted Water Bodies

Many recreational opportunities exist for polluted water bodies in Central Massachusetts, provided that water quality is improved. Those opportunities are primarily those of boating, swimming, fishing, and picnicking.

Table 14

Central Massachusetts Treatment Facilities: Potential Projects

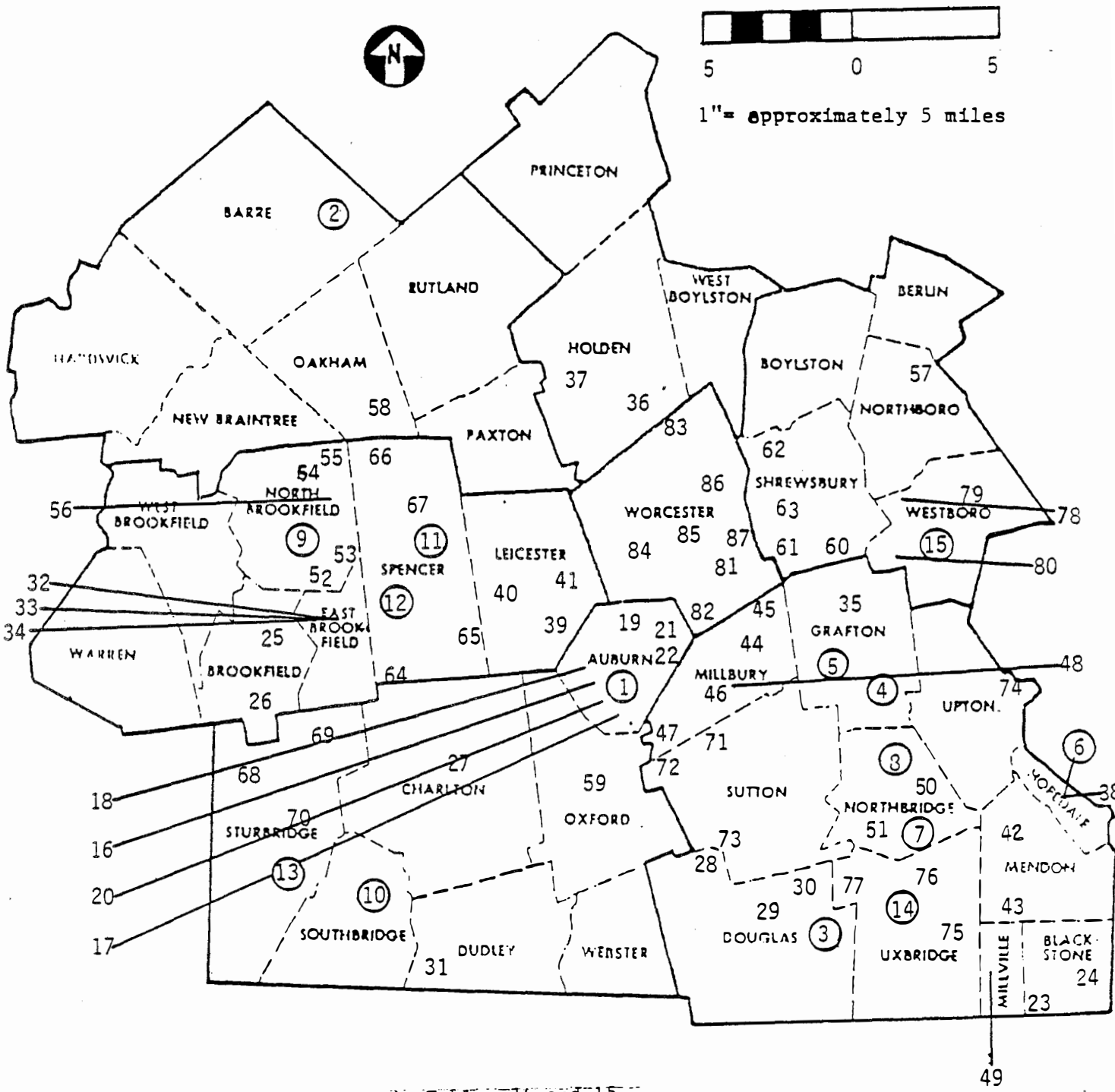
Town	High	Medium	Low
Auburn		1. Hiking/biking path along Dark Brook/ Kettle Brook Interceptor.	
Barre		2. Playground and/or nature study area at proposed secondary WWTP - Step III.	
Douglas	3. Hiking/biking path along Mumford River Interceptor.		
Grafton		4. Picnic area, hiking path, and public access point to Blackstone River at Grafton WWTP.	
			5. Hiking/biking path along Quinsigamond River.
Hopedale		6. Playground area at Hopedale WWTP	
Northbridge	7. Picnic area and resting spot for proposed path system at the Northbridge WWTP.		
	8. Multiple purpose recreation path and linkage with proposed state park along the Mumford and Blackstone River Interceptor.		
North Brookfield		9. Playground site at North Brookfield WWTP.	
Southbridge			10. Small park area at Southbridge WWTP - Step I.

Table 14 (continued)

Town	High	Medium	Low
Spencer		11. Picnic area and roadside rest at the Spencer Pump Station.	
		12. Park and nature study area at the Spencer WWTP.	
Sturbridge		13. Small park and picnic area at the Sturbridge Pump Station.	
Uxbridge		14. Biking/hiking and scenic area along the Blackstone River Interceptor.	
Westborough		15. Public access point to Assabet River at Westborough WWTP.	

FIGURE 9

Central Massachusetts Recreation and Open Space Opportunities Associated With Water Clean-Up



Numbers are referenced in Tables 14 and 15.
Circled numerals indicate a potential recreation project at a treatment facility.
Other numerals are polluted bodies of water with recreation potential.

Polluted water bodies were investigated in Central Massachusetts and ranked in Table 15 according to the following criteria: ownership, accessibility, specific pollution problems, and potential opportunities.

Water bodies with highly ranked opportunities are Quaboag Pond in Brookfield, Seven Mile River in East Brookfield, the French River in Oxford, Big Allum Pond, Quacumquasit Pond, and Ceder Pond in Sturbridge, Dark Brook Reservoir in Auburn, Blackstone River in Blackstone, the Mumford River in Mumford, Singletary Pond in Millbury, Lake Quinsigamond in Shrewsbury, Lake Chauncy and Flow Augmentation Pond in Westborough, Mauchaug Pond in Sutton, and, Indian Lake, Salisbury Pond, and Green Hill Pond in Worcester. Ranked water bodies are located in Figure 9.

C. Recommendations

In respect to the recreation opportunities identified for polluted water bodies and sewage treatment facilities, specific recommendations are made in the town by town assessments below. In addition to these specific recommendations, it should also be pointed out that local town Boards of Health should identify and attempt to correct failing septic systems and treatment facilities which are contributing to water quality problems in lakes, ponds and rivers. It is also recommended that local planning boards institute land-use controls and programs to educate the public about water quality in problem areas.

Table 15

Central Massachusetts Polluted Water Bodies: Potential Projects

Town	High	Medium	Low
Auburn		16. Boating, swimming, and fishing at Dark Brook Reservoir if public access is provided.	
		17. Boating, swimming, fishing, camping, picnicking, and hiking along Eddy Pond.	
		18. Swimming, fishing, and canoeing at the Stoneville Reservoir if public access is provided.	
		19. Swimming, fishing, and canoeing at Stoneville Pond if public access is provided.	
		20. Fishing and picnicking at Leesville Pond if public access is provided.	
			21. Limited recreational at Pondville Pond.
		22. Hiking area at Kettle Brook.	

Table 15 (continued)

Town	High	Medium	Low
Blackstone	23. Fishing and passive recreation area along the Blackstone River.		
		24. Swimming, fishing, and picnicking along the Mill River.	
Brookfield		25. Fishing and trapping along Dunn Brook.	
	26. Fishing, canoeing, and swimming at Quaboag Pond.		
Charlton			27. Limited recreation potential at Cady Brook due to shallowness.
Douglas			28. Limited recreational opportunities at the Mouchaug Pond.
			29. Limited recreational opportunities at Crystal Lake.
	30. Fishing and passive recreation along Mumford River.		
Dudley		31. Canoeing and fishing at the Quinebaug River.	

Table 15 (continued)

Town	High	Medium	Low
East Brookfield			32. Small degree of trout fishing and trapping along Dunn Brook.
		33. Fishing, canoeing, picnicking, and riverside benches along the East Brookfield River.	
	34. Picnicking, fishing, and nature study area along the Seven Mile River.		
Grafton		35. Fishing and canoeing along the Blackstone River.	
Holden	36. Little league fields, tennis and basketball courts, and fishing along Chaffins Pond.		
		37. Public beach, boating and skating along Eagle Lake.	
Hopedale		38. Fishing, picnicking, and hiking along the Mill River/Hopedale Pond Impoundment.	

Table 15 (continued)

Town	High	Medium	Low
Leicester		39. Picnicking, fishing, canoeing, sailing, and ice skating at Greenville Pond.	
		40. Nature trails, picnic areas, pond side benches, fishing, and ice skating at the Stiles Reservoir.	
	41. Fishing, boating, and swimming along the French River.		
Mendon			42. Limited recreational opportunities at the Mill River.
	43. Water quality at Lake Nipmuc has been rated acceptable; however, increased residential development could cause future pollution.		

Table 15.(continued)

Town	High	Medium	Low
Millbury			44. Fishing along the Blackstone River.
		45. Swimming and picnicking along Dorothy Pond.	
	46. Swimming, boating, and fishing at Singletary Pond.		
			47. Swimming, fishing, and boating at Ramshorn Pond.
		48. Swimming, fishing and picnicking at Brierly Pond.	
Millville			49. Fishing and multi-purpose recreational path along the Blackstone River.
Northbridge		50. Fishing and canoeing along the Blackstone River.	
	51. Fishing, canoeing, and swimming along the Mumford River.		
North Brookfield			52. Fishing and trapping at Dunn Brook.
		53. Boating, fishing, and picnicking along Five Mile River and Lake Lashaway.	

Table 15 (continued)

Town	High	Medium	Low
		54. Picnicking, canoeing, and sailing at Horse Pond.	
		55. Picnicking, canoeing, and sailing at Brooks Pond.	
		56. Canoeing and sailing at Kittredge Dam.	
Northborough			57. Canoeing along the Assabet River.
Oakham			58. Canoeing, sailing, fishing, and picnicking at Dean Pond.
Oxford	59. Swimming, fishing, canoeing, and riverside benches along the French River.		
Shrewsbury		60. Fishing, swimming and boating on Flint Pond.	
		61. Fishing, swimming, and canoeing at Jordan Pond.	
		62. Fishing and swimming at Newton Pond.	
	63. Fishing, swimming, and boating at Lake Quinsigamond.		

Table 15 (continued)

Town	High	Medium	Low
Spencer		64. Picnicking, nature study areas, and trout fishing at the Seven Mile River. 65. Present heavy recreational use at the Stiles Reservoir. 66. Picnicking, canoeing, and fishing at Brooks Pond. 67. Canoeing and sailing at Kittredge Dam.	
Sturbridge	68. Swimming, fishing, boating, and picnicking at Big Alum Pond. 69. Present heavy recreational use at Quacumquasit Pond. 70. Swimming, boating, fishing, and picnicking at Cedar Pond.		
Sutton	71. Fishing, boating, and swimming at Singletary Pond. 73. Fishing, boating, and swimming at Manchaug Pond.	72. Fishing, boating, and swimming at Ramshorn Pond.	
Upton			74. Fishing on the Mill

Table 15 (continued)

Town	High	Medium	Low
Uxbridge			75. Fishing on the Blackstone River. 76. Fishing on the Mumford River. 77. Fishing and swimming on the Lockey Pond.
Westborough	79. Fishing, boating, and swimming on Lake Chauncy. 80. Fishing, swimming, and a recreation area at Flow Augmentation Pond.		78. Fishing on the Assabet River.
Worcester	82. Hiking, fishing, and greenway along the Blackstone River. 83. Swimming, fishing, boating and sailing at Indian Lake. 85. Swimming, hiking, fishing, small craft boating, and greenway along Salisbury Pond.	81. Hiking, fishing, and greenway along Kettle Brook. 84. Swimming, fishing, small craft boating, and hiking at Coes Reservoir.	

Table 15 (continued)

Town	High	Medium	Low
Worcester (continued)	86. Swimming, canoeing, and sailing at Green Hill Pond. 87. Fishing, boating, swimming, and picnicking at Lake Quinsigamond.		

REGIONAL OVERVIEW: NORTHERN MIDDLESEX AREA

The cleanup of Massachusetts' waters has made new open space and recreational opportunities possible. This same cleanup increases shoreline land values and, in many cases, has spurred development. Unfortunately, all too frequently, such development has restricted public access to these waters. However, the large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water.

The goal of the Federal Water Pollution Control Acts as Amended in 1977 is to ensure all waters meet Class B water quality. Class B is commonly referred to as the "fishable-swimmable" class which means suitable for water contact recreation. This already suggests a strong link between water cleanup efforts and recreation.

The Act further directs, in Section 208 and Section 201, that grantees assess recreation and open space opportunities as a part of this wastewater cleanup effort. Section 201 directives focus on wastewater treatment; Section 208 also includes opportunities that can be expected to result from improved water quality.

Efforts are already underway in several Merrimack river towns and cities to revitalize and provide access to the riverbanks. These and further river-related actions are supported by previous studies. The Massachusetts Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that two of the most popular recreational activities - bicycling and nature walking - show the most significant deficit of statewide facilities. Opportunities for both are beginning to be built on the Merrimack. These could be extended and connected by multiple use facilities. Increasing river recreation would also serve other state policy objectives: increasing open space for urban residents, providing for local as well as regional needs, and opening access to a major regional resource.

The NMAC Regional Recreation and Open Space Plan advocates using the existing drainage system as the basis for the regional open space system. Easements and rights of access along the banks of rivers and streams are encouraged to preserve natural beauty, allow recreation paths, and access for boating and fishing. The Merrimack River Watershed Council is the sponsor of a Greenway Plan to coordinate open space, recreation and public works along the river. Their proposed plan emphasizes use of the river banks as a continuous linkage of river based facilities. The Watershed Council, through its Greenway Plan, can be a powerful force for recreation along the river, as has been well demonstrated by other watershed associations in the state.

A. Supply and Demand

The Northern Middlesex Area has 9,059 acres devoted to recreation. According to the 1978 State Comprehensive Outdoor Recreation Plan, of a total of 177 sites, 67 are intensive recreation (high density, swimming pools, tennis courts, skating rinks); 47 are general recreation areas (bicycle paths, picnic areas, boat ramps); 59 are natural areas (undeveloped cross-country skiing, hunting) and 1 is a historical/cultural site. The majority of the sites are urban. The area's critical facility needs are cross-country motor biking and down hill skiing. Many other facilities are needed, such as various types of trails, and multiple use of interceptors could supply some of these needs.

B. Opportunities

Treatment Facilities

Potential multiple uses of treatment facilities include boat launch ramps on treatment plant sites; informal picnic areas on open spaces on the site or reseeded sludge beds; and hiking/bicycling trails on easements for interceptor lines.

There are two wastewater treatment plants, in Billerica and at Duck Island in Lowell. No new plants are being planned for the region. Twenty-six different interceptor lines and two pump stations have multiple use recommendations. Both pump stations and twenty-one of the interceptors are proposed facilities.

The advantage of working with proposed facilities is that both recreational and wastewater facilities can be designed and constructed simultaneously. A significant cost savings can be realized, especially in construction. Furthermore, EPA's policy is to pay up to the cost of an equivalent "single purpose" facility, which means that cost for items like site restoration could be applied toward the recreation components.

In Billerica, Dracut, Lowell and Tewksbury, many of the facilities are already built or are under construction. Therefore, the chance to actually implement multiple use projects in conjunction with construction is slim. It should be noted that even though an interceptor may be completed, it still offers potential for multiple use although the savings that might have resulted from simultaneous construction will not be enjoyed.

Treatment Facility Ranking

This section ranks the multiple use potential of the interceptors and pump stations identified on both a regional and community basis. The ranking is the first step in planning for development of outdoor activities on these facilities; those that are highly ranked should be studied in detail. The Pathfinder, a handbook for citizens planning for multiple use, describes the intensive examination of promising POTWs that should be undertaken next. On closer examination some of the facilities may prove less promising than they appeared at first. Others may be very attractive. Additional uses may suggest themselves as the terrain is walked.

A most important part of this next step procedure will be determining ownership of the land through which the interceptor passes. If the number of owners is small, the job of obtaining easements will be very much simplified.

The rankings were accomplished without considering availability of coordinating funding or community enthusiasm. It should be emphasized that, because interceptors entirely unsuitable for multiple use were excluded from this report in Task I, all of the interceptors, regardless of their ranking, have some recreational potential. If funding should become available or a citizen advocate group develops in the future for any one of these interceptors, that interceptor should be considered as having the highest ranking.

Community need must be considered when funding decisions are made. Should communities with clear recreational need and low-ranked interceptors be considered before communities with well developed recreational resources and interceptors with the highest potential? This issue must be carefully considered by the decision-making agency.

For this project, a 'first cut' analysis was made to eliminate POTWs that are obviously unsuitable for recreational use. The following criteria were used in this preliminary analysis.

(1) Sections of interceptors running through heavily developed residential or industrial areas and leading to no desirable destination (e.g., commercial area, historic site, recreational area, etc.) were excluded.

(2) Interceptors routed down a street for the major part of their length were excluded.

(3) Facilities intended to store or treat sewage that are not covered or completely sealed off by a barrier were excluded because of potential for accidental contact.

POTWs excluded by the above criteria were not mapped. All others were mapped and described by community. Public and semi-public conservation and recreational lands, educational institutions, historical areas, prime agricultural land, existing farmland, and protective zoning within reasonable distance of each POTW was mapped and inventoried. All of the above land uses within the five hundred to one thousand foot corridor on either side of each interceptor were mapped. Additional tracts beyond that corridor were mapped if their unique character, their regional importance, their position as part of a connecting or nearly connecting set of open space parcels, or their importance as a component part of a future series of connected recreational land uses and open spaces (schools) suggested that they might have significant influence in ranking interceptors for multiple use potential.

Definition of each information category and its effect, if any, on the final ranking is clarified below. Numbers indicating final rankings have been distributed on a regional basis. Those treatment works with best regional potential are ranked 1. Interceptors with lowest numbers on a town-by-town basis have top local priority. For

example: in Chelmsford, the interceptors are ranked 2 and 3 because none of them have regional features. From a local point of view, however, the interceptors ranked "2" are top ranked in the town and should be given prime community consideration for multiple use. See Table 16 for a summary of the rankings.

Categories are discussed in the same order in which they appear on the chart. The importance of the category as a factor in the ranking is noted as is its rating scale when relevant.

Type of POTW: No effect on ranking.

Estimated Date of Construction: No effect on ranking. POTWs were ranked without regard to their construction status as it is possible to add recreational facilities to a POTW that has been constructed.

Length: Slight effect on ranking. All other things being equal, a longer interceptor segment, especially if its greater length was in public ownership, was given priority.

Width: No effect on ranking. All of the easement widths can support some kind of recreation.

Public Land On/Near Route: Major effect on ranking. POTWs passing through public land were given priority because the difficulty of securing easements is reduced. There are other benefits: existing facilities may be enhanced by the POTW facility; maintenance programs may be in place; policing mechanisms may exist. POTWs passing near enough to public lands so as to be considered as connections between these lands were also given priority. A caveat regarding this category - the concentration of facilities that this policy supports must be carefully judged. Integration of facilities on a regional or community basis is desirable - a bikeway to provide better access is clearly a recreational plus - but selecting between regions or communities for funding on this basis alone may not be so desirable. Funding priority should perhaps go to the community with very poor existing facilities.

Schools: Moderate effect on ranking. Priority was given to POTWs near enough to schools to become major educational or recreational resources. Interceptors with bikeway potential running between schools and residential areas were given priority.

Other Land: Moderate effect on ranking. Nearby land or features, such as historic districts or major water bodies whose presence enhanced the attractiveness of the POTW for multiple use, were considered positive influences.

Potential Access: Slight effect on rankings. POTWs with existing access, or places with potential access such as public road crossings, were given a slight priority, especially if there were several such places. Rating scale: fair; good.

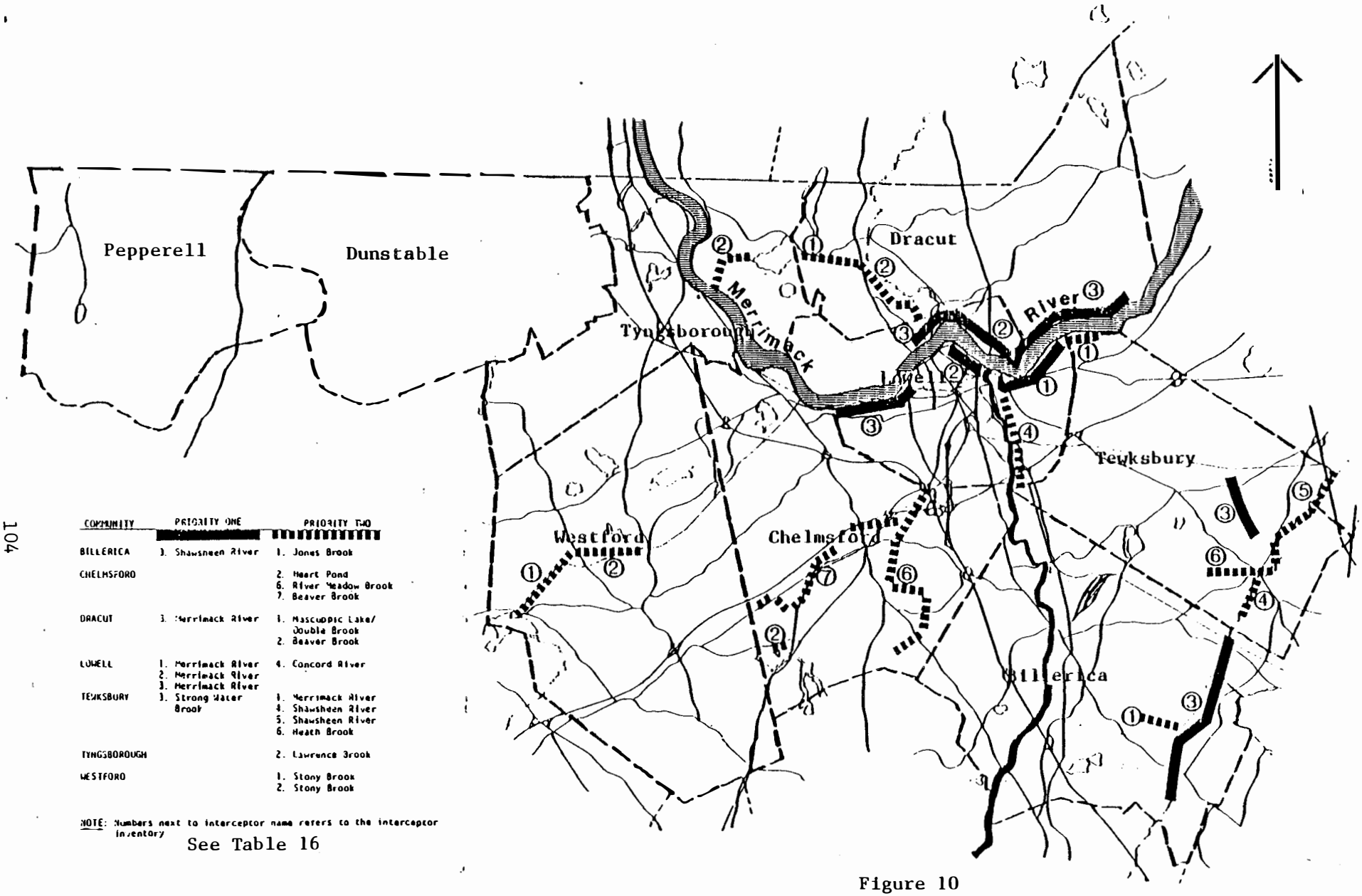
Complexity of Ownership: Slight to moderate effect on ranking. Ownership of land accommodating POTWs was not surveyed for this study. A POTW running through existing public land was given priority. Those

Table 16

Northern Middlesex Treatment Facilities: Potential Projects

Interceptors and pump stations ranked below on a regional and community basis. High regional ranking should not necessarily be equated with overall development priority. Interceptors are ranked highly on a regional basis in this study if they serve more than one town, are associated with features of more than local significance, and if they are highly ranked on a local basis. Recreational opportunity should be developed at all scales. It is important to remember that all of the interceptors on this chart have at least modest recreational possibilities as those interceptors with no potential were dropped out of the evaluation earlier.

COMMUNITY	PRIORITY ONE	PRIORITY TWO	PRIORITY THREE
BILLERICA	Shawsheen River	Jones Brook (proposed)	Concord River
CHELMSFORD		Heart Pond (proposed) River Meadow Brook (proposed) Beaver Brook (proposed) Crystal Lake Pump Station (proposed)	Stony Brook (proposed) Deep Brook (proposed)
DRACUT	Merrimack River (proposed)	Mascuppic Lake/ Double Brook Beaver Brook (proposed)	Trout Brook (proposed)
DUNSTABLE	No Facilities		
LOWELL	Merrimack River (proposed) Merrimack River (proposed)	Concord River (proposed)	
PEPPERELL			Brook Interceptors (proposed)
TEWKSBURY	Strong Water Brook (proposed)	Merrimack River (proposed) Shawsheen River (proposed) Shawsheen River (proposed) Heath Brook (proposed)	Trull Brook (proposed) Meadow Brook (proposed)
TYNGSBOROUGH		Lawrence Brook (proposed)	Mascuppic Lake Pump Station (proposed)
WESTFORD		Stony Brook (proposed) Stoney Brook (proposed)	

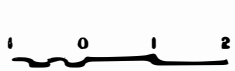


COMMUNITY	PRIORITY ONE	PRIORITY TWO
BILLERICA	3. Shawsheen River	1. Jones Brook
CHELMSFORD		2. Heart Pond 6. River Meadow Brook 7. Beaver Brook
DRACUT	3. Merrimack River	1. Mascuppic Lake/ Double Brook 2. Beaver Brook
LOWELL	1. Merrimack River 2. Merrimack River 3. Merrimack River	4. Concord River
TEWKSBURY	3. Strong Water Brook	1. Merrimack River 4. Shawsheen River 5. Shawsheen River 6. Heath Brook
TYNGSBOROUGH		2. Lawrence Brook
WESTFORD		1. Stony Brook 2. Stony Brook

NOTE: Numbers next to interceptor name refers to the interceptor inventory

See Table 16

Figure 10
Recreation and Open Space Opportunities
Associated With Treatment Facilities



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NORTHERN MIDDLESEX AREA

passing through areas that typically have many owners were somewhat downgraded. It was expected that the process of securing public access easements from a large number of owners would be time consuming and difficult. Rating scale: 1 (least complex); 2; 3 (most complex).

Possible Uses: Slight to moderate effect on ranking. POTWs near water (most of them) were given priority. Number of possible uses was not a ranking consideration.

The final rankings are highly subjective. Multiple use is a little tried opportunity. If a group or a town is seriously interested in trying to establish a multiple use facility, that fact should override all other considerations. This has been noted earlier; it is important enough to repeat.

Pump Station and Treatment Plants: Some node facilities of these kinds are described in the charts. Only a few were ranked. In most cases, such facilities must be regarded on an individual basis; their charcteristics and potential are difficult to evaluate except on an in-depth individual basis. Many existing facilities in the region have extra land that might be turned to some recreational use. It is hoped that each town will carefully assess its node facilities for the possibility of including some recreational or educational opportunity.

Polluted Water Bodies

There are many multiple use opportunities for recreation involving polluted water bodies. These include boating, swimming, fishing, picnic areas, camping, hiking/biking paths and boat launching.

Water bodies (including lakes, rivers and brooks) were investigated in the Northern Middlesex Area and are ranked in Table 17 according to the following criteria: other public ownership of property, accessibility to public; type of water pollution problem, and types of multiple use opportunities.

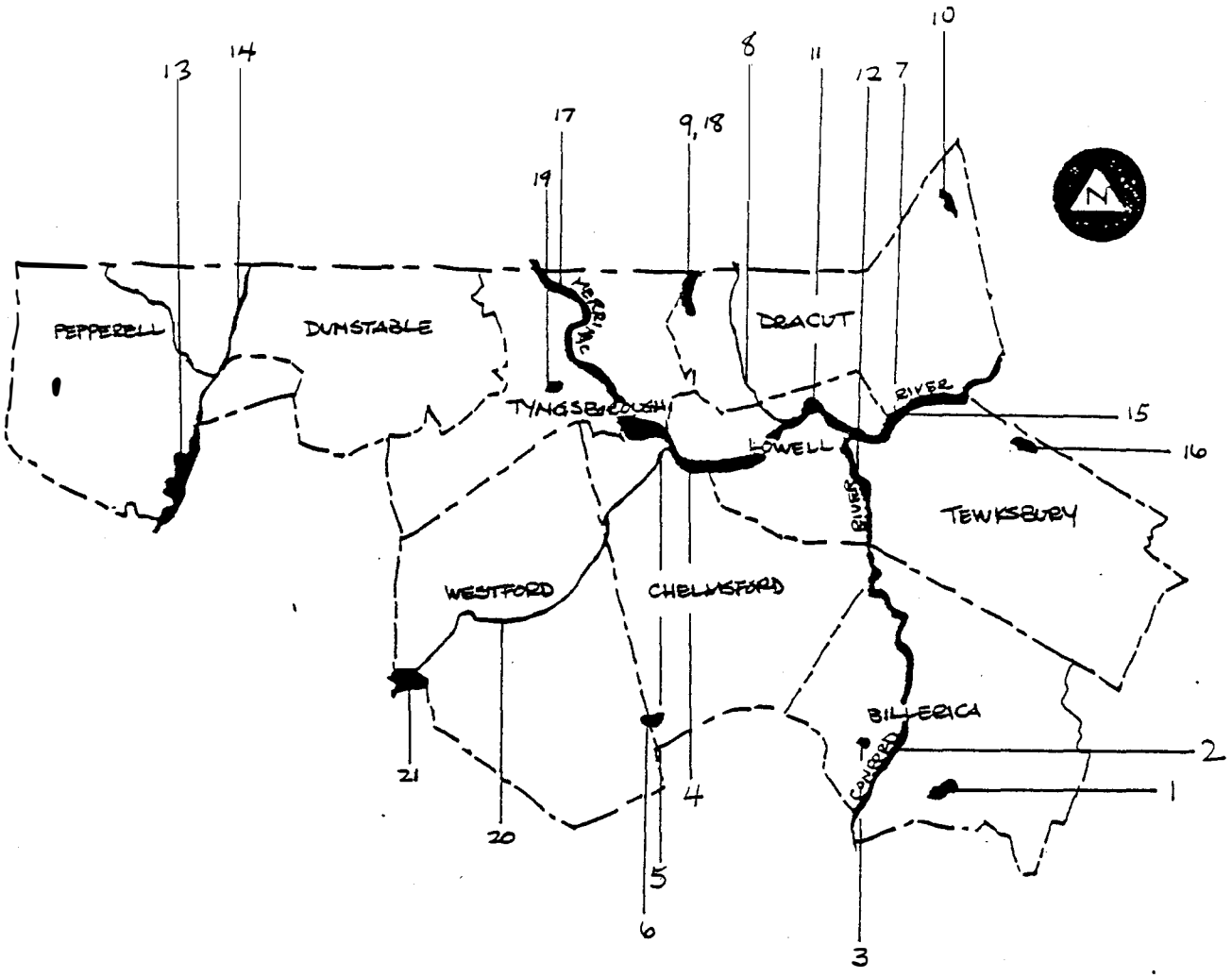
The polluted water body with the most potential in the Northern Middlesex Area is the Merrimack River which passes through Tyngsborough, Chelmsford, Lowell, Dracut, and Tewksbury. Opportunities vary from natural parks to the heritage and historical parks in Lowell to trails or bikeways in the towns with narrow strips along the river.

Other water bodies with highly ranked recommendations are Nutting Lake in Billerica and Stony Brook in Westford. Nutting Lake is currently being dredged to improve the water quality. It is bordered by several publicly owned lands which could provide additional public access to the lake. Stony Brook is already used for canoeing and fishing. There are a number of publicly owned lands along the brook and a trail on top of the proposed interceptor would provide links among these lands.

Table 17

Northern Middlesex Polluted Water Bodies: Potential Projects

COMMUNITY	Priority HIGH		MEDIUM		LOW	
Billerica	1	Nutting Lake	2	Concord River	3	Winning Pond
Chelmsford	4	Merrimack River			5	Stony Brook
					6	Heart Pond
Dracut	7	Merrimack River				
			8	Beaver Brook		
			9	Long Pond		
			10	Peters Pond		
Dunstable		None				
Lowell	11	Merrimack River	12	Concord River		
Pepperell	13	Pepperell Pond	14	Nashua River		
Tewksbury	15	Merrimack River			16	Ames Pond
Tyngsboro	17	Merrimack River				
	18	Long Pond				
					19	Upton Pond
Westford	20	Stony Brook	21	Forge Pond		



NORTHERN MIDDLESEX AREA

Figure 11

Recreation and Open Space Opportunities Associated With Water Clean-Up

(see Table 17)

The cleanup of Massachusetts' waters has made new open space and recreational opportunities possible. This same cleanup increases shoreline land values and, in many cases, has spurred development. Unfortunately, all too frequently, such development has restricted public access to these waters. However, the large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water.

The goal of the Federal Water Pollution Control Acts as Amended in 1977 is to ensure all waters meet class B water quality. Class B is commonly referred to as the "fishable-swimmable" class which means suitable for water contact recreation. This already suggests a strong link between water cleanup efforts and recreation.

The Act further directs, in Section 208 and Section 201, that grantees assess recreation and open space opportunities as a part of this wastewater cleanup efforts. Section 201 directives focuses on wastewater treatment, section 208 also includes opportunities that can be expected to result from improved water quality. Thus the remainder of this report examines, first regionally, and then town by town, the recreation and open space opportunities that can be expected to result from water cleanup, both the potential use of lands associated with treatment works and increased access to water based recreation.

The Merrimack Valley Region is just north of Metropolitan Boston and has many recreational areas that are heavily used, not only by the region's own inhabitants but by many Bostonians. Special care should be taken to enlarge and protect existing recreational areas along with providing new facilities for the growing population of the region. Sections 201 and 208 provide new opportunities for the development of recreation and open space in conjunction with wastewater treatment facilities and water cleanup activities.

A. Supply and Demand

Merrimack Valley is one of the regions in the state whose recreation areas are accessible by public transportation. According to the 1978 State Comprehensive Outdoor Recreation Plan (SCORP), out of a total of 220 sites, 69 are intensive recreation (high density, swimming pools, tennis courts, skating rinks); 43 are general recreation areas (bicycle paths, picnic areas, boat ramps); and 108 are natural areas (undeveloped, cross-country skiing, hunting). The greatest number are natural, non-urban areas of less than 1,000 acres. The Merrimack Valley Region's one critical need according to SCORP's data, is for hunting areas.

B. Opportunities

Treatment Facilities

Potential multiple uses of treatment facilities include boat launch ramps on treatment plant sites; informal picnic areas on open spaces on the site or reseeded sludge beds; and hiking/bicycling trails on easements for

interceptor lines.

There are 4 completed wastewater treatment plants in the Merrimack Valley Region, and one proposed plant in the Step II planning phase. There are a large number of interceptors with multiple-use recommendations, 5 of which have excellent potential.

The advantage of working with proposed facilities is that both recreational and wastewater facilities can be designed and constructed simultaneously. A significant cost savings can be realized, especially in construction. Furthermore, EPA's policy is to pay up to the cost of an equivalent "single purpose" facility, which means that costs for items like site restoration could be applied toward the recreation components.

Table 18 on the following page ranks the recommendations made for wastewater treatment facilities. To accomplish the ranking, a series of criteria was established and applied to each of the MVPC region's 36 sewer interceptors.

In all, 5 criteria were used to evaluate the 36 interceptors. These criteria are as follows:

a. Number of owners of interceptor easement or right-of-way

b. Accessibility of interceptor route to the public

c. Dimensions (length and width) of right-of-way

d. Location of interceptor (i.e., its actual placement under roads beneath waterways, or cross-country)

e. Proximity of right-of-way to areas of recreational, historical, or environmental significance. (Schools and libraries were also included.)

The criteria were all given equal consideration since it was impossible at this time to clearly establish one variable as being significantly more important than another in the successful recreational development and use of the interceptors. It should be noted, however, that it was necessary to apply criteria "d" from the outset, since the location of an interceptor beneath a roadway or in the middle of a stream channel would severely reduce or eliminate its potential for recreational use.

Another important factor, one which was not used in the ranking but should be considered when decisions of funding and ultimate development are made, is that of community need. Is it more important for a community with little or no recreational opportunities to have an interceptor route developed despite difficulty in meeting the 5 criteria cited above; or, is it better to develop those multiple use projects that have the best chances for success, regardless of their community need? This is a policy level decision that cannot be addressed by this report. However, the issue of community need is one which must be carefully weighed by the decision-making agency.

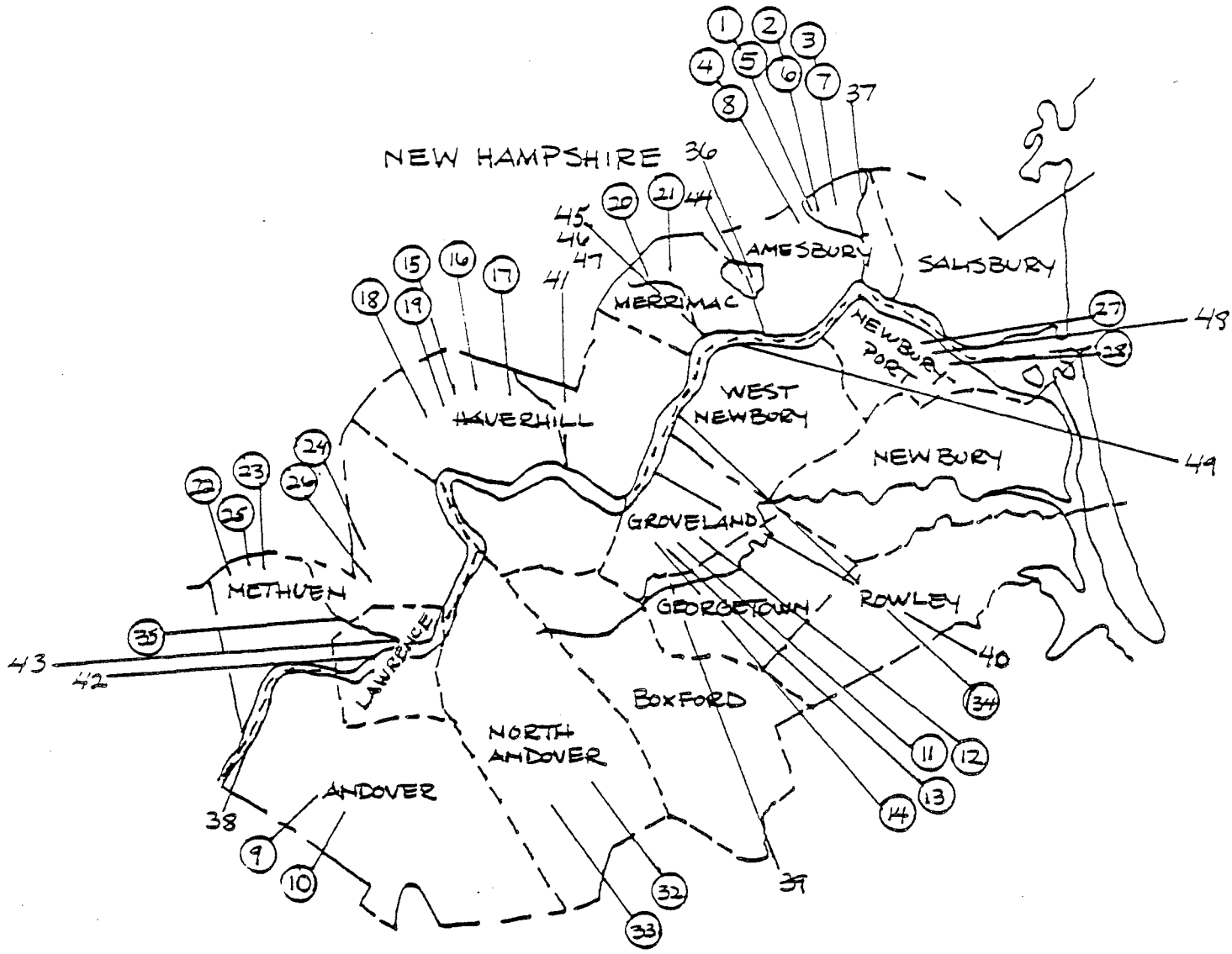
Table 18

Merrimack Valley Treatment Facilities: Potential Projects

COMMUNITY	HIGH	MEDIUM-HIGH	MEDIUM	MEDIUM-LOW	LOW
Amesbury		1. Powwow River Interceptor (existing)	2. Lake Gardner Interceptor (Step 2)	3. Clark's Pond Interceptor (Step 3) 4. Patten's Brook Interceptor 5. Macy Street Interceptor	6. Market Street Interceptor 7. Main Street Interceptor 8. Haverhill Road Interceptor
Andover	9. Shawsheen River Interceptor		10. Andover Interceptor		
Groveland			11. Main Street Interceptor Extension 12. Argilla Brook Interceptor		13. Main Street Interceptor 14. Washington St. Interceptor
Haverhill	15. Ward Hill Interceptor Extension		16. Bradford Interceptor 17. Ward Hill Interceptor 18. North Bank Interceptor Extension 19. North Bank Interceptor		
Merrimac	20. Cobbler Brook Interceptor 21. River Road Interceptor				

Table 18 (continued)

COMMUNITY	HIGH	MEDIUM-HIGH	MEDIUM	MEDIUM-LOW	LOW
Methuen	22. Merrimack Interceptor	23. Hawkes Brook/ Bare Meadow Brook Interceptor		24. Woodland Street Relief Interceptor	25. Spickett River Relief Interceptor 26. Riverside Drive Interceptor
Newburyport			27. Storey Avenue		28. Merrimack St./ Water St. Interceptor 29. High Street Interceptor 30. Low Street Interceptor 31. Hale Street Interceptor
North Andover				32. West Side Interceptor 33. East Side Interceptor	
Greater Lawrence Sanitary District	34. North Bank Interceptor			35. South Bank Interceptor	36. Spickett River Interceptor



MERRIMAC VALLEY REGION

Recreation and Open Space Opportunities
Associated With Water Clean-Up

KEY: (1) Treatment Facilities
35 Polluted Water Bodies

See Tables 18 and 19

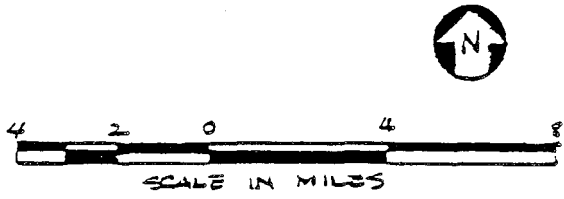


Figure 12

Based on the established criteria and assumptions, Table 18 summarizes the evaluation of the 36 interceptors found in the MVPC Region. The interceptors are ranked, by community, as high (best potential for successful development and use), medium (moderate potential for successful development and use), and low (least potential for successful development and use). Each community's interceptors are rated not only with respect to one another, but to other interceptors throughout the MVPC Region. Thus, for example, the Powwow River Interceptor in Amesbury, while scoring the highest of Amesbury's interceptors, is not rated as high as Haverhill's highest-ranking interceptor (Ward Hill Interceptor Extension).

It should be recognized that the rankings based on the above criteria are, in part, subjective. Given additional data, local needs, and other factors, the rankings could easily be modified. Nevertheless, these first-cut assessments are useful in that they can begin to promote thinking about the multiple use process and potential sites for multiple use projects in the Merrimack Valley. Final establishment and success of such projects will, of course, depend on the interest and actions of the individual communities and the local user groups.

Polluted Water Bodies

There are many multiple use opportunities for recreation involving polluted water bodies. These include; boating, swimming, fishing, picnic areas, camping, hiking/biking paths and boat launching ramps.

Eight different polluted water bodies (including lakes, rivers and brooks) were investigated in the Merrimack Valley Region and are ranked in Table 19 according to the following criteria: existing recreational facilities (town only or broader public, not private); other public ownership of property, accessibility to public; type of water pollution problem, and types of multiple-use opportunities.

The polluted water body with the most potential in the Merrimack Valley Region, is the Merrimack River. The majority of the towns in the region border the river and most have publicly owned property with frontage on the Merrimack. This creates numerous possibilities for recreation along the river.

Other water bodies with highly ranked recommendations are the Little River, the Spickett River and Lake Attitash. All of these have existing publicly owned properties adjacent to them which have excellent potential for recreational use.

Table 19

Merrimack Valley Polluted Water Bodies: Potential Projects

Town	High	Medium	Low
AMESBURY		37. Public Access to Attitash	38. Public Access to Powwow River
ANDOVER	39. Trail through Conservation property along Merrimack River		
GEORGETOWN		40. Nature trails along Parker River	
GROVELAND			41. Trail along Merrimack
HAVERHILL	42. Greenbelt Plan for Merrimack and Little Rivers		
LAWRENCE	43. Riverside recreation area and bike path along the Merrimack River 44. Recreational development along Spicket River		
MERRIMAC	45. Development of town property on Lake Attitash 46. Development of town boat launch on existing property	47. Greenbelt along Cobbler Brook	48. Public Access to Merrimack River
NEWBURYPORT		49. Hiking/bicycling path along Merrimack	
WEST NEWBURY			50. Public access to Merrimack River

REGIONAL OVERVIEW: METROPOLITAN BOSTON PARTS A TO D

The cleanup of Massachusetts' waters has made new open space and recreational opportunities possible. This same cleanup increases shoreline land values and, in many cases, has spurred development. Unfortunately, all too frequently, such development has restricted public access to these waters. However, the large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water.

The Metropolitan Area has more recreation sites than any other region in the state. However, as the demand for recreational facilities increases, new avenues must be explored, especially in areas as densely developed as Metropolitan Boston. Because of the large number of facilities and polluted water bodies in the area, the region was divided into four (4) parts, A through D, for the purposes of this study. The boundaries of each part are shown in Figures 13-16.

A. Supply and Demand

The Metropolitan Area has the greatest number of recreational sites in the state. According to the 1978 State Comprehensive Outdoor Recreation Plan, out of a total of 2,060 sites, 872 are intensive recreation (high density, swimming pools, tennis courts, skating rinks); 359 are general recreation areas (bicycle paths, picnic areas, boat ramps); 757 are natural areas (undeveloped, cross-country skiing, hunting); and 60 are historical/cultural sites. The majority of the sites are urban and less than 10 acres. The Metropolitan Area's critical facility needs are: golf, hunting, ice-skating, picnicking, shooting/archery, snow-mobiling, swimming (pools) . Massachusetts Bay and several major river basins and estuaries contribute to the need for continued emphasis on shoreline and wetland protection in Area D.

B. Opportunities

Treatment Facilities

Potential multiple uses of treatment facilities, include boat launch ramps on treatment plant sites; informal picnic areas on open spaces on the site or reseeded sludge beds; and hiking/bicycling trails on easements for interceptor lines.

There are five (5) completed wastewater treatment plants in Part A of the Metropolitan Area, and two (2) more are in the planning stages. Ten (10) different interceptor lines have multiple use recommendations, three (3) of which have excellent potential.

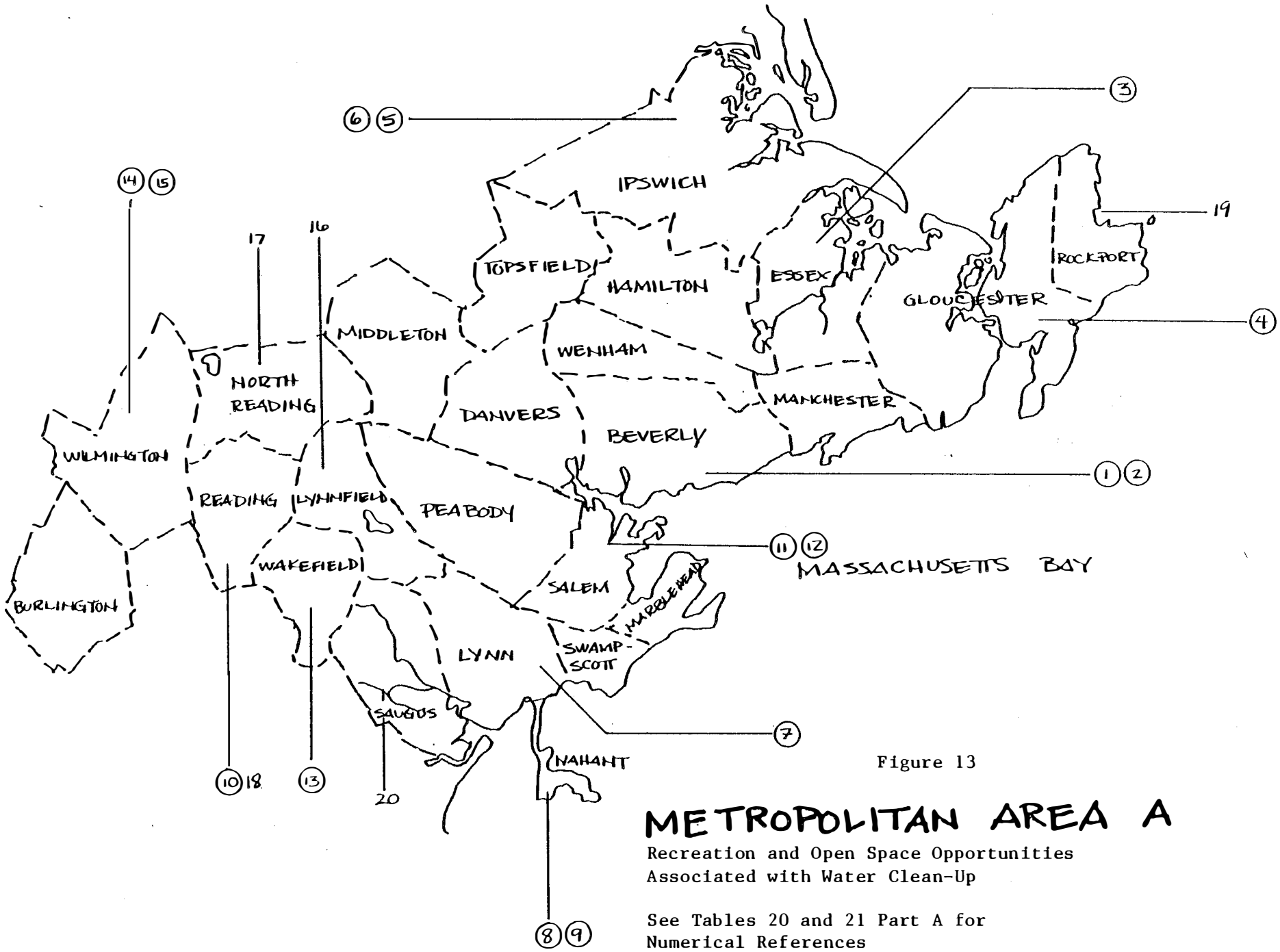


Figure 13

METROPOLITAN AREA A

Recreation and Open Space Opportunities
Associated with Water Clean-Up

See Tables 20 and 21 Part A for
Numerical References

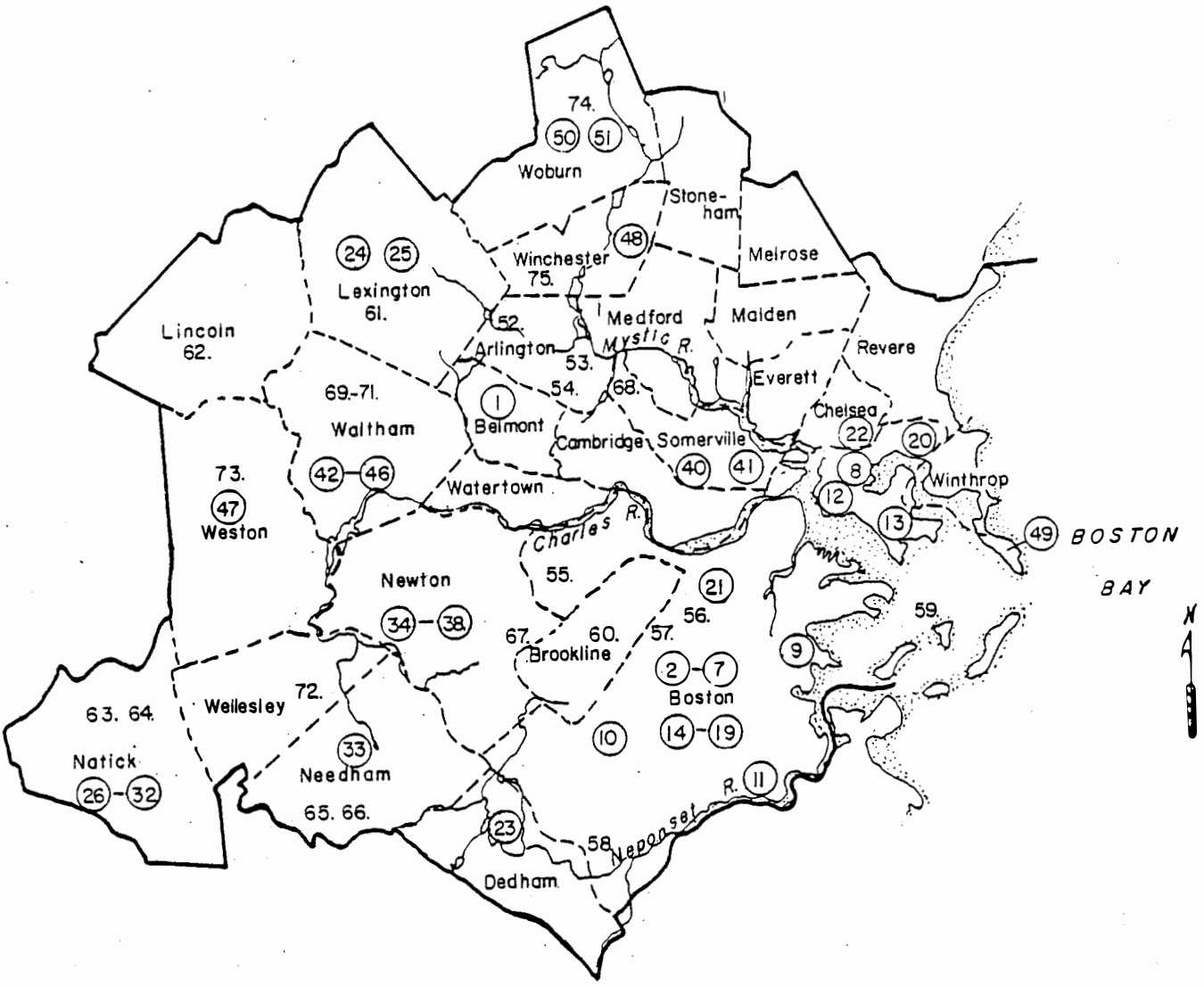


Figure 14

METROPOLITAN AREA

PART B

Recreation and Open Space Opportunities
Associated with Water Clean-Up

Numbers are referenced in Tables 20 and 21, Part B.
Circled numerals indicate a potential recreation project at a treatment facility.
Other numerals are polluted bodies of water with recreation potential.

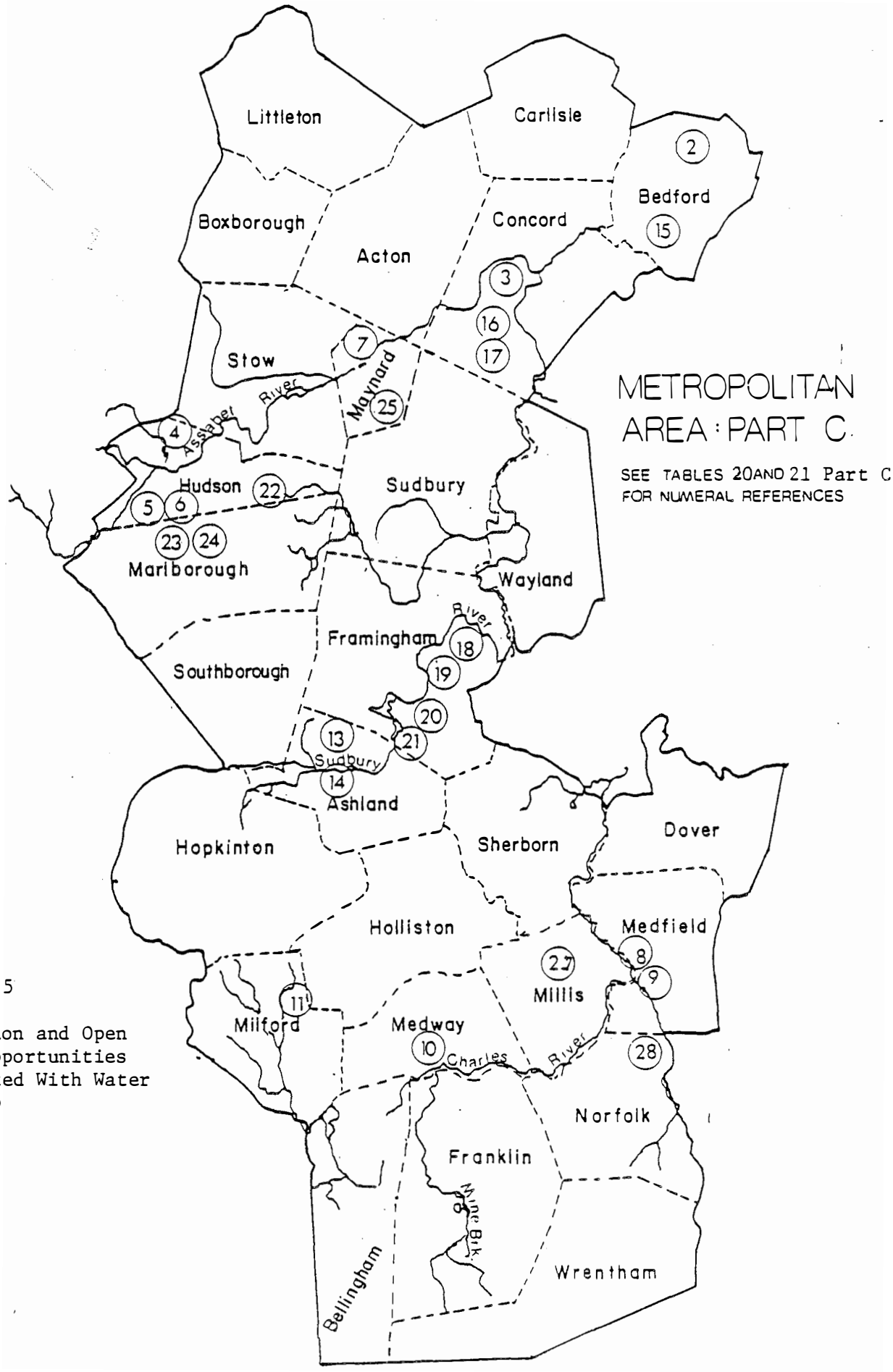


Figure 15

Recreation and Open Space Opportunities Associated With Water Clean-Up

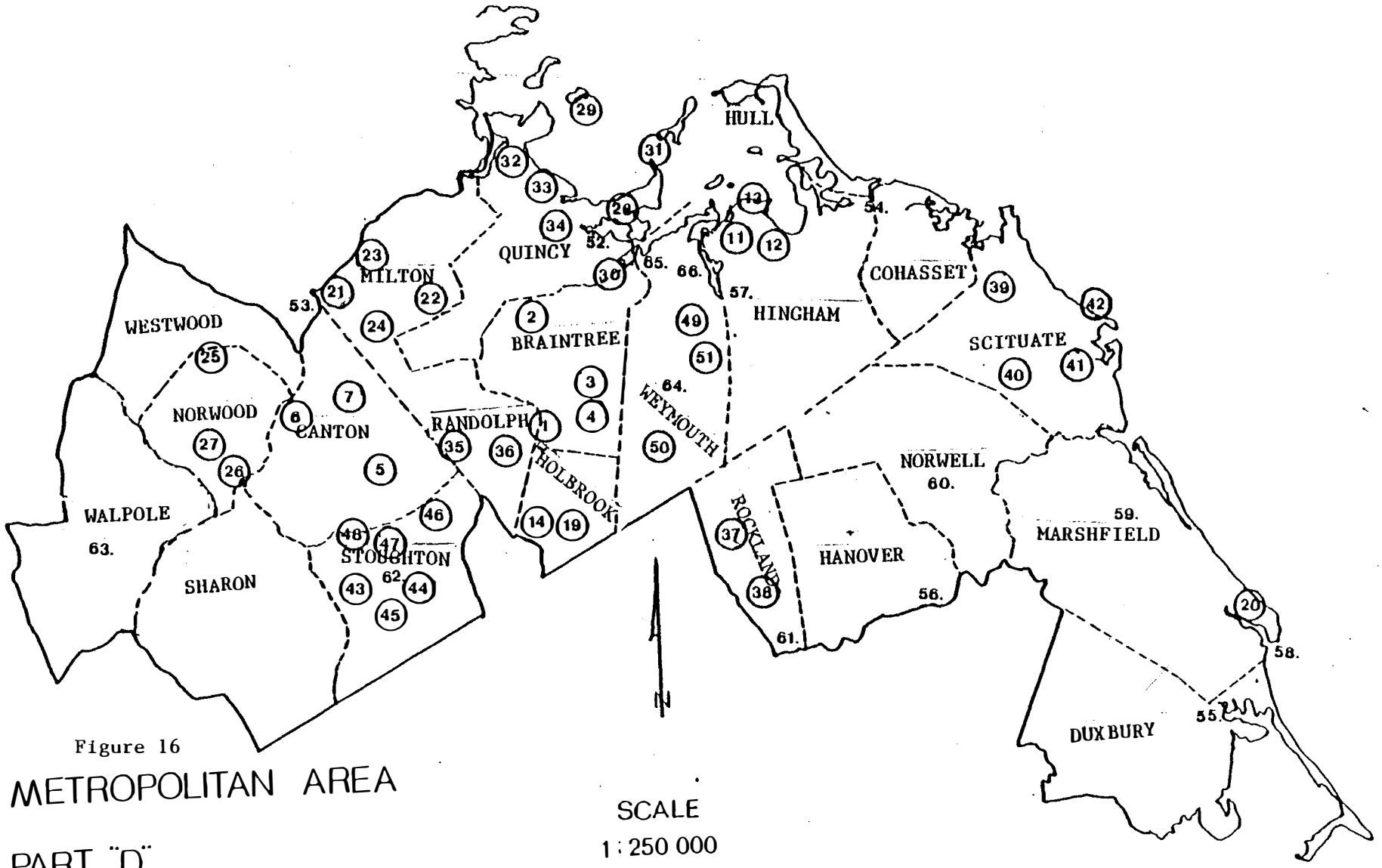


Figure 16

METROPOLITAN AREA

PART "D"

Pecreation and Open Space Opportunities
Associated With Water Clean-Up

Numbers are referenced in Tables 20 and 21, Part D,
Circled numerals indicate a potential recreation project at a treatment facility.
Other numerals are polluted bodies of water with recreation potential.

The major wastewater treatment plant of the Metropolitan Area Part B is operated by the MDC and located on Deer Island in Winthrop. This primary treatment facility has a high potential use as an environmental education center. Of the other sewerage facilities in the area, fifty (50) have some potential for multiple use. Those with a high potential include thirteen (13) sewer interceptors or segments of interceptors, and eight (8) combined sewer overflow abatement projects.

In addition, Part B of the Metropolitan Area will undergo sewer changes in order to abate and/or treat combined sewer overflow (CSO) in Boston, Watertown, Cambridge, Somerville, Chelsea and Brookline. In some cases these facilities conflict with existing recreation areas. In others there are multiple use opportunities such as parks, hard surface play areas or pedestrian malls.

There are nine (9) completed wastewater treatment plants in Part C of the Metropolitan Area plus one (1) interceptor line. There is multiple-use potential in the vicinity of many pump stations in various cities and towns in the Metropolitan Area.

There are six (6) existing wastewater treatment plants in Area D of the Metropolitan Area. Four (4) of these facilities are scheduled for upgrading, one is a new plant, and one will be replaced by a proposed facility. None of the existing plants has a high potential for multiple use, but the new Marshfield plant and the Nut Island (MDC) plant should be further evaluated for multiple use possibilities. In addition, the Moon Island retention basins (MDC) could be considered for multiple use. Nine (9) pump stations and one abandoned night soil facility have multiple use recommendations, although none of these have a high potential. Eight (8) interceptors, including five (5) MDC intercepting sewers have high multiple use potential. An additional twenty-seven (27) local interceptors and sewer lines have multiple use recommendations; however, many of these involve only short sections of the easements for possible local use.

Proposed projects include those treatment plants, pump stations and sewer lines which are in the planning (Step I) or design (Step II) stages. Of these, one proposed treatment plant and two proposed interceptors have a high multiple use potential. An additional four (4) proposed pump stations and sixteen (16) proposed interceptors should be evaluated in more detail for possible recreational uses.

The advantage of working with proposed facilities is that both recreational and wastewater facilities can be designed and constructed simultaneously. A significant cost savings can be realized, especially in construction. Furthermore, EPA's policy is to pay up to the cost of an equivalent "single purpose" facility, which means that costs for items like site restoration could be applied toward the recreation components.

Table 20 on the following pages ranks the recommendations made for wastewater treatment facilities for each parts A through D of the Area.

The criteria used for ranking treatment plants and pump stations were: available open space on the site; access to water (e.g. boat

launch, fishing); accessibility to the public; proximity or linkages with areas of recreational, historical or environmental significance; and physical site compatibility (e.g. no excessively steep slopes, etc.). The criteria used to evaluate interceptors were: number of owners of interceptor easements or rights-of-way. Whether easements already allowed public access: accessibility of interceptor route to the public; dimensions (length and width) of right-of-way; location of interceptor (actual placement cross-country) and its proximity to areas of recreational, historical or environmental significance (schools and libraries were also included).

Of all the multiple use opportunities in Part A of the Metropolitan Area, the proposed plant sites in Gloucester and Lynn have the best potential. Both sites are still in the planning stages and might easily include recreation plans in their overall concepts. In Part B, the proposed CSO-abatement projects in Boston and the interceptor relief work in Lexington have the best potential. Since these projects are in the planning/design stages, recreation facilities could be included in their specifications. In Part D the proposed plant site in Cohasset has the best potential. This site is also in the planning stages and might easily include recreation plans in its overall concept.

Polluted Water Bodies

There are many multiple use opportunities for recreation involving polluted water bodies. These include: boating, swimming, fishing, picnic areas, camping, hiking/biking paths and boat launching ramps.

Four polluted water bodies (including lakes, rivers and brooks) were investigated in Part A of the Metropolitan Area, and are ranked in Table 21 according to the following criteria: existing recreational facilities (town only or broader public, not private); other public ownership of property, accessibility to public; type of water pollution problem, and types of multiple-use opportunities. None of the polluted water bodies in Part A have highly ranked recreational potential.

Of the polluted water bodies examined in Part B, twelve (12) have a high potential for recreational use or improvement in recreational quality as a result of water clean-up activities. Notably, several have regional or statewide significance. The cleanup of Boston Harbor includes literally millions of dollars in existing and proposed wastewater treatment projects. These projects promise to provide a tremendous increase in the availability of recreation in Boston Harbor, on the waterfronts, and on the Harbor Islands. It is expected that the improvement in Boston Harbor water quality will bring accompanying economic improvements resulting from improved recreational opportunities. In a similar manner, water quality improvement of the Charles River will have a very high potential for expanded water based recreation in Greater Boston, including eight (8) surrounding cities and towns.

Four polluted major water bodies (including numerous lakes, rivers and ponds) were investigated in Part C and twelve (12) polluted water bodies were investigated in Part D. All of the polluted water bodies

Part D have highly ranked recreational potential for one or more communities. The Neponset River, for example, is a major, potential recreational resource for six (6) communities in Area D. Although not appropriate for intensive recreation in all areas, wetlands preservation, open space and boating opportunities will all benefit from various efforts to clean up the Neponset River. The other major river basins with recreation potential include the Weymouth-Fore, Weymouth-Back, South, French's, Drinkwater and Indian Head Rivers.

Table 20 Metropolitan Boston Treatment Facilities: Potential Project, Part A

TOWN	HIGH	MEDIUM	LOW
Beverly		1.Bike path along interceptor from Tall Tree Drive to Connor Road	
Danvers		2.Bikepath along interceptor from Conant St. to rt. 128	
Essex	3. Hiking/biking path and nature study trail along interceptor along Essex River		
Gloucester	4.Playfields at proposed treatment plant site		
Ipswich		5. Trail along interceptor from Town Wharf Pump Station to treatment plant. 6.Pump station picnic area	
Lynn	7.Boat launch at proposed treatment plant sites		
Nahant		8. Lowlands Pump Station bird watching blind 9. Lowlands interceptor as nature trail	
Reading		10. Nature study walkway/ observatory along interceptor from Charles St. to Brook St.	
Salem			11. Ravenna St. Pump Station as tot lot 12. Bikepaths along new Ravenna St. interceptors
Wakefield	13. Bikepaths along Saugus River and Mill River trunk sewer lines		

Table 20 (continued)

	HIGH	MEDIUM	LOW
Wilmington	14. Bikepath along the Northern section of the Silver Lake II interceptor to the McDonald Rd. Conservation Area.	15. Step I Facility Plan for North Wilmington interceptor and pump station.	

Table 20 Metropolitan Area Treatment Facilities: Potential Projects, Part B

TOWN/CITY	HIGH	MEDIUM	LOW
Belmont			1. Winter St. interceptor bikeway and park linkage
Boston	2. CSO outlet Fox Point - pedestrian and park improvements 3. CSO outlet Commercial Point - pedestrian and park improvements. 4. CSO storm drain extention relocation Pine-Neck Creek - park development 5. CSO force main and storage area Port Norfolk - park development 6. CSO treatment Fort Point Channel - park development 7. CSO consolidation wet weather pipeline & conduit Waterfront + North End pedestrian mall open space 8. CSO consolidation pipeline East Boston, southern and western waterfronts - pedestrian mall open space	9. Calf Pasture Pump Station - boat launch & park 11. CSO storage facility Granite Avenue - park development 12. CSO treatment East Boston Lexington Square - park development 13. CSO consolidation pipeline Lexington Square - pedestrian way 14. CSO screening facilities Commercial St. North End - park development	10. CSO underground storage, pump station, flow diversion, Green St. - park & bike path or pedestrian way 15. CSO - screening & disinfection facility Gurney St. - park 16. CSO surface storage and screening Cantebury Brook - park 17. CSO pump station Chickatawbut St. -park 18. CSO screening facilities & consolidation pipeline, Reserved Channel - park 19. CSO treatment, East Boston, Western waterfront- park development 20. CSO screening facility East Boston Constitution Beach - park development

Table 20 Continued

TOWN/CITY	HIGH	MEDIUM	LOW
Boston (continued)			21. CSO screening facility Causeway St. - North End - park development
Chelsea			22. CSO pipelines and treatment facilities - park development
Dedham	23. Charles River Interceptor-bikeway, roller skating, water access		
Lexington	24. Millbrook Valley Interceptor and relief sewer - "Minute Man" commuter bikeway 25. Main outlet interceptor hiking trails & nature study		
Natick	26. MDC Interceptor and Replacement Sewer - bike trail, ski trail, hiking trail	27. Town-line Pump Station - playlot 28. Jennings Pond Pump Station - bath house 29. Oak St. Pump Station - park 30. Dug Pond Pump Station bath house	

Table 20 Continued

TOWN/CITY	HIGH	MEDIUM	LOW
Natick (Continued)		31. Belleview Rd Pump Station - park playlot 32. Cresent St. Pump Station - picnic area	
Needham	33. MDC Interceptor openspace, greenbelt conservation corridor		
Newton	34. Charles River sewers- park linkages & hiking trails, greenbelt 35. Hammond Brook sewers - conservation & nature trail	36. MDC Neponset Valley Interceptor - open space conservation - footpath or bike trail 37. Cheesecake Brook sewers - foot trails	38. Islington Rd, Edge water Pt., & Quinobequin Pump Stations - equipment storage or rest rooms
Somerville	40. Tannery Brook CSO storage - passive open space or hard surface play areas		41. CSO treatment Mystic River - Park Improvement
Waltham	42. Charles River Interceptor - hiking trail park linkage	43. Wimbeldon Circle and Bear Hill Pump stations - park expansion and improvement 44. Clematis Brook & Beaver Brook Interceptor - nature trail & park linkage	

Table 20 Continued

TOWN/CITY	HIGH	MEDIUM	LOW
Waltham (Continued)		45. Chester Brook Interceptor - park linkage trails	
		46. Hobbs Brook/Main St. Interceptor-park linkage & pedestrian way	
Weston			47. Proposed Community septic tank - conservation & open space
Winchester	48. MDC Interceptors along Aberjona River - existing bike Path and good example of multiple use		
Winthrop	49. Deer Island Treatment Plant - environmental education center		
Woburn	50. Aberjona Interceptor - bikeway hikeway 51. Horn Pond Interceptor - bikeway, hikeway park linkage		

Table 20 Metropolitan Area Treatment Facilities: Potential Projects Part C

Town	High	Medium	Low
Bedford			2. Interceptor from Burlington Road alongside Shawsheen River as a bikeway/ hikeway trail.
Concord			3. Pump station 200' to 300' from Assabet as a nature trail.
Franklin	10. Trunk sewer easements acquire additional land to add for parks and playground.		
Hudson	4. Treatment of plant area as a park/ball field.	5. Cord Street pump station as an educational walkway, biking trail. 6. Pump station near Assabet River as a multi-use recreational area.	
Maynard			7. Treatment plant site-limited walkway.

continued

Table 20

	High	Medium	Low
Medfield		8. Treatment plant area - conservation purposes.	9. Pump station - passive recreation.
Medway	10. Trunk sewer easements acquire additional land to add for parks and playground.		
Milford		11. Louisa Lake pump station are a hiking, skiing, nature walkway, supervised swimming and picnicing.	12. Charles Street pump station - nature study trails.

Table 20 Metropolitan Area Treatment Facilities: Potential Projects, Part D

Town	High	Medium	Low
Braintree	(1) Braintree-Randolph Extension Sewer- foot trail, greenbelt (MDC)	(2) Old Quincy Reservoir and Howard Creek Sewers-foot paths	(3) Farm River, Cranberry Brook, Monatiquoit River Sewers- foot path (4) Williams Ct. Pump Station- park or rest area
Canton		(5) Pequid Brook, Ponkapog Pond Sewers- foot trails	(6) Neponset Valley Sewer- wetland trail (MDC) (7) Ponkapog Brook sewer- foot trail
Cohasset	(8) Proposed treatment plant- bikeway, pedestrian trail	(9) Proposed pump stations- Pleasant and Black Rock Beaches-bath houses or storage areas (10) Proposed Interceptor, STP to Beechwood St- bike trail	
Hingham		(11) Bradley Woods Pump Station-playground expansion (12) Old Night Soil Facility, Nokomis Rd.-park or playground	(13) Bel Aire Pump Station- rest room, storage area, or small park

Table 20 (continued)

Town	High	Medium	Low
Holbrook		(14) Existing Tumbling Brook and Lake Holbrook Sewers- trails, greenbelt (15) Proposed Fairfield and Brookville Pump Stations- evaluate for multiple use potential (16) Proposed Plymouth St. Sewer- footpath (17) Proposed Trout Brook Sewer- nature trail (18) Proposed Tumbling Brook Sewer- pedestrian and bicycle trail (19) Proposed Union St. Interceptor- footpath, greenbelt	
Marshfield		(20) Wastewater Treatment Plant- waterfowl observation area, town pier access	
Milton	(21) Neponset Valley Sewer- footpath, wetland trail	(22) Governor's Rd. Pump Station- postage stamp park	(23) Truman Highway Pump Station- small park (24) Cunningham Park, Milton Cemetary, local sewers- footpath

Table 20 (continued)

Town	High	Medium	Low
Norwood	(25) Westwood Extension Sewer(MDC)-open space, passive recreation (26) Walpole Extension Sewer- trails, passive recreation	(27) Existing local sewers at Townline (Westwood), Hawes Brook, Union Street, Traphole Brook- footpaths, nature trails, passive recreation, open space	
Quincy	(28) Braintree-Weymouth Extension Sewer(MDC)-open space and wetland protection	(29) Moon Island Retention Basins (Boston Water and Sewer Commission)-boating area, future park site (30) Quincy Point Force Main- footpath	(31) Nut Island Wastewater Treatment Plant (MDC)-pedestrian and smallcraft access to water and future waterfront park (32) Squantum Force Main (MDC)-pedestrian trail (33) Squantum and Rock Island Cove Pump Stations (MDC)-passive recreation (34) Merrymount Park interceptors- footpath
Randolph	(35) Narroway Brook Sewer-hiking trail	(36) Main Trunk Sewer- pedestrian trail	
Rockland	(37) French Stream Sewer- open space, wetland protection		(38) Studley Pond Sewer Easement- footpath

Table 20 (continued)

Town	High	Medium	Low
Scituate	(39) Proposed North Scituate Interceptor- bikeway	(41) Eleven Proposed Pump and Ejector Stations- to be evalutated for multiple use	
	(40) Proposed Reservoir Interceptor- bikeway, hiking trail	(42) Sand Hill Pump Station	
Stoughton	(43) Steep Hill Brook Sewer- nature/hiking trail, greenbelt	(44) Daly Drive Pump Station- conservation greenway	(47) Cushing/Central St. Sewer- footpath
		(45) Shirley Rd Sewer- hiking trail	(48) Island St. Sewer- nature trail
		(46) Glen Echo Rd/York St. Sewer- hiking trail	
Weymouth		(49) Essex/Jaffrey St. Sewer- wetland, floodplain protection	(51) East Weymouth Pumping Station- small park
		(50) Old Swamp River Sewer- open space, greenbelt	

Table 21 Metropolitan Boston Polluted Water Bodies: Potential Projects, Part A

TOWN	HIGH	MEDUIM	LOW
Lynnfield		16. Public access to Pillings Pond.	
North Reading		17. Picnicking and nature study area at Martins Pond.	
Reading		18. Greenbeet along the Aberjona Stream Channel.	
Rockport			19. Fishing and shoreline picnicking along the Sandy Bay River.
Saugus		20. Bikeway along Saugus River to Breakheart Reservation.	

Table 21 Metropolitan Boston Polluted Water Bodies: Potential Projects Part B

TOWN/CITY	HIGH	MEDIUM	LOW
Arlington	52. Mill Brook - Arlington Reservoir access and water quality improvement - linear park		
Arlington & Medford	53. Upper & Lower Mystic Lakes - more public access & water quality improvement		
Arlington	54. Spy Pond waterfront park and public access		
Boston, Cambridge, Dedham, Natick, Needham, Newton, Waltham, Watertown & Wellesley	55. Charles River water quality improvement, increased access & bikeways		
Boston & Brookline	56. Muddy River, Leverett Pond, Willow Pond - water quality improvement, increased water opportunities in the "Emerald Necklace"		57. Sawmill Brook & Lost Pond - increased access & water quality improvement.
Boston & Dedham	58. Neponset River - water quality improvement, increased access and park development in Dorchester & Dedham		
	59. Boston Harbor - water quality improvement, increased public access and waterfront development, pedestrian mall and open space		

Table 21 Continued

TOWN/CITY	HIGH	MEDIUM	LOW
Brookline		60. Hall's pond - increase in park facilities	
Lexington		61. Mill Brook - fishing & picnicing improvements	
Lincoln		62. Sudbury River - wildlife, conservation open space and nature study	
Natick	63. Morses Pond - water contact recreation when improved 64. Lake Cochituate - water quality improvement water contact recreation		
Needham	65. Rosemary Lake - improvement of existing facility for swimming & boating	66. Walker Gordon Pond & Needham Reservoir - boating and swimming if improved	
Newton		67. Sawmill Brook - greenbelt conservation area	
Somerville	68. Mystic River Outlet of Lower Mystic Lake to Earhart Dam - boating riverside park		
Waltham		69. Chester Brook - greenbelt conservation area	

Table 21 Continued

TOWN/CITY	HIGH	MEDIUM	LOW
Waltham (Continued)		70. Hardy Pond - swimming beach & playground improvement 71. Walker Pond - nature trails ice skating, urban wildlife	
Wellesley	72. Lake Waban -waterfront park public access Morses Pond - park development		
Weston			73. Charles River - passive recreation, greenbelt & open space
Winchester & Woburn	74. Aberjona River - greenbelt open space, water quality improvements		
Winchester	75. Upper Mystic Lake - water quality improvement essential for existing recreation areas		

Table 21 Metropolitan Boston Polluted Water Bodies: Potential Projects, Part C

Town	High	Medium	Low
Ashland		13. Sudbury River - boating picnic and play area. 14. Mushakeem Pond - water-based activities.	
Bedford			15. Concord River - boating, fishing, riverside benches and nature study trails.
Concord			16. Assabet River - fishing and boating. 17. Small section of Swallow River - for swimming.
Framingham	18. Farm Pond - all water related activities; picnic grounds. 19. Waushakeem Pond - bathing and fishing. 20. Outlet of Lake Cochituate public landing (boats).	21. Sudbury River water related sports.	

Continued

Table 21 (continued)

Town	High	Medium	Low
Hudson			22. Assabet River - small boating and fishing.
Marlborough			23. Hager Pond - develop fishing facilities. 24. Assabet River - boating.
Maynard			25. Assabet River - open space walkway, as well as small boat facility.
Millis		27. Sugar Brook - picnicking and playground facilities.	
Norfolk		28. Populatic Pond - to expand beach; all playground and picnic facilities.	

Table 21 Metropolitan Boston Polluted Water Bodies: Potential Projects, Part D

Town	High	Medium	Low
Braintree, Quincy	(52) Weymouth-Fore River- fishing, swimming, boating		
Canton, Milton, Norwood, Quincy, Walpole, Westwood	(53) Neponset River- possible recreation and nature study (especially Fowl Meadow), fishing, hiking, picknicking		
Cohasset and Hull	(54) Straights Pond- rowing, other small boating, recreation complex		
Duxbury	(55) South River- boating, fishing, camping		
Hanover	(56) French's Stream, Drinkwater River, and Indian Head River system- swimming, boating, and fishing		
Hingham		(57) Weymouth Back River- swimming, fishing, boating, camping, picknicking	
Marshfield	(58) Green Harbor- boating, fishing, wetlands preservation		
	(59) South River- wetlands preservation, passive recreation		
Norwell	(60) Jacobs Pond- boating, fishing, and passive recreation		

Table 21 (continued)

Town	High	Medium	Low
Rockland	(61) French Stream- fish and wildlife habitat, fishing		
Stoughton	(62) Pinewood (Harris) Pond- swimming beach		
Walpole	(63) Stop River - nature trail, hiking, fishing		
Weymouth	(64) Whitman's Pond- passive recreation, fish migration study area		
	(65) Weymouth-Back River- fish, wetland protection		
	(66) Weymouth- Fore River- fishing, swimming, boating		

REGIONAL OVERVIEW: OLD COLONY

The large investment of public funds in water quality management planning and pollution control facilities means the public is entitled to the benefits of clean water. Water quality standards are the heart of all water quality management programs; therefore, there is a strong link between water cleanup efforts and recreation.

The Federal Water Pollution Control Act as amended in 1977 ensures all waters meet Class "B" water quality, which in effect means suitable for water contact recreation or "fishable/swimmable".

The Act further directs, in Section 208 and Section 201, that grantees assess recreation and open space opportunities as a part of this wastewater cleanup effort. Section 201 directives focus on wastewater treatment; Section 208 also includes opportunities that can be expected to result from improved water quality. Thus the remainder of this report examines, first, regionally, and then town-by-town, the recreation and open space opportunities that can be expected to result from water cleanup, both the potential use of lands associated with treatment work and increased access to water based recreation.

A. Supply and Demand

Old Colony has 28,034 acres of land that are designated as recreational according to the Massachusetts State Comprehensive Outdoor Recreation Plan. There are 114 Intensive Recreation Areas, 68 General Recreation Areas, and 29 Natural Areas. (See Mass. State Comprehensive Outdoor Recreation Plan.)

The above plan also documents the need for additional recreation areas, most notably for swimming, power boating, hiking, bicycling, tennis, and golf. Much of this demand could be met through multiple use opportunities investigated in this report.

B. Opportunities

Treatment Facilities

Potential multiple uses of treatment facilities include boat launch ramps on treatment plant sites; informal picnic areas on open spaces on the site of reseeded sludge beds; and hiking/bicycling trails on easements for interceptor lines.

There are three (3) completed wastewater treatment plants, four (4) pump stations, and five (5) interceptors in Old Colony. However, since

the existing wastewater treatment facilities in Old Colony did not have potential for recreation, (see town-by-town write-ups) no recommendations were made.

Although these treatment facilities did not have potential for multiple-use recreation, the opportunities for recreation for proposed facilities should be taken into consideration. The advantage of working with proposed facilities is that both recreational and wastewater facilities can be designed and constructed simultaneously. A significant cost savings can be realized, especially in construction. Furthermore, EPA's policy is to pay up to the cost of an equivalent "single purpose" facility, which means that costs for items like site restoration could be applied toward the recreation components.

Polluted Water Bodies

There are many multiple-use opportunities for recreation involving polluted water bodies. These include: boating, swimming, fishing, camping, picnic areas, hiking paths, nature trails, and boat launching ramps.

Fifteen polluted water bodies (including numerous lakes, rivers, and ponds) were investigated in Old Colony, and are ranked in Table 5 according to the following criteria: existing recreational facilities (town only or broader public, not private); other public ownership of property, accessibility to public; type of water pollution problem, and types of multiple-use opportunities.

Table 22 Old Colony Polluted Water Bodies: Potential Projects

Town	High	Medium	Low
Abington	1. Shumatuscacant River- canoeing, sailing, hiking, and picnicking.		
	2. Cleveland Pond- fishing, camping, sailing, canoeing, picknicking, hiking, and nature study areas.		
Avon	3. Brockton Reservoir-shoreline fishing, picnicking, hiking, and scenic area.		
Bridgewater			4. Sawmill Brook- nature trails and hiking.
		5. Taunton River-fishing, canoeing, hunting, trapping, hiking, and picnicking	
	6. Lake Nippenicket- swimming, fishing, canoeing, sailing, and picnicking		
		7. Carver pond-fishing, canoeing, sailing, picnicking, and nature study areas/	

Table 22 (continued)

Town	High	Medium	Low
Brockton		8. Salisbury Plain River- fishing, canoeing, sailing, picnicking.	
			9. Trout Brook- fishing, canoeing, and row boating.
East Bridgewater	10A. Robbins Pond - swimming, fishing, boating.	10. Satucket River- nature trails, picnic areas canoeing, and fishing	10B. Matfield River- fish and wildlife propogation, fishing.
		11. Salisbury Plain River- fishing, canoeing, sailing, and picnicking.	
Easton	12. Ames Pond-swimming, fishing, canoeing, sailing, and picnicking.		
Halifax		13. Taunton River- fishing. canoeing, hunting, trapping, hiking, and picnicking	
Hanson	14. Shumatuscacant River- fishing, picnicking, hiking, canoeing, and sailing.		
Kingston		15. Jones River-fishing, canoeing, sailing, picnicking, hiking, and nature trails.	
Pembroke	16. Indian Head River- fishing, canoeing, camping, picnicking, and nature study areas.		

Table 22 (continued)

Town	High	Medium	Low
Plymouth	17. Plymouth Harbor-swimming, fishing, boating, hiking, picnicking, and scenic viewing.		
West Bridgewater		18. Salisbury Plain River-fishing, canoeing, sailing, and picnicking.	
Whitman	19. Shumatuscacant River-canoeing, sailing, hiking, and picnicking. 20. Hobart Pond - fishing and canoeing.		

The Old Colony Planning Council District

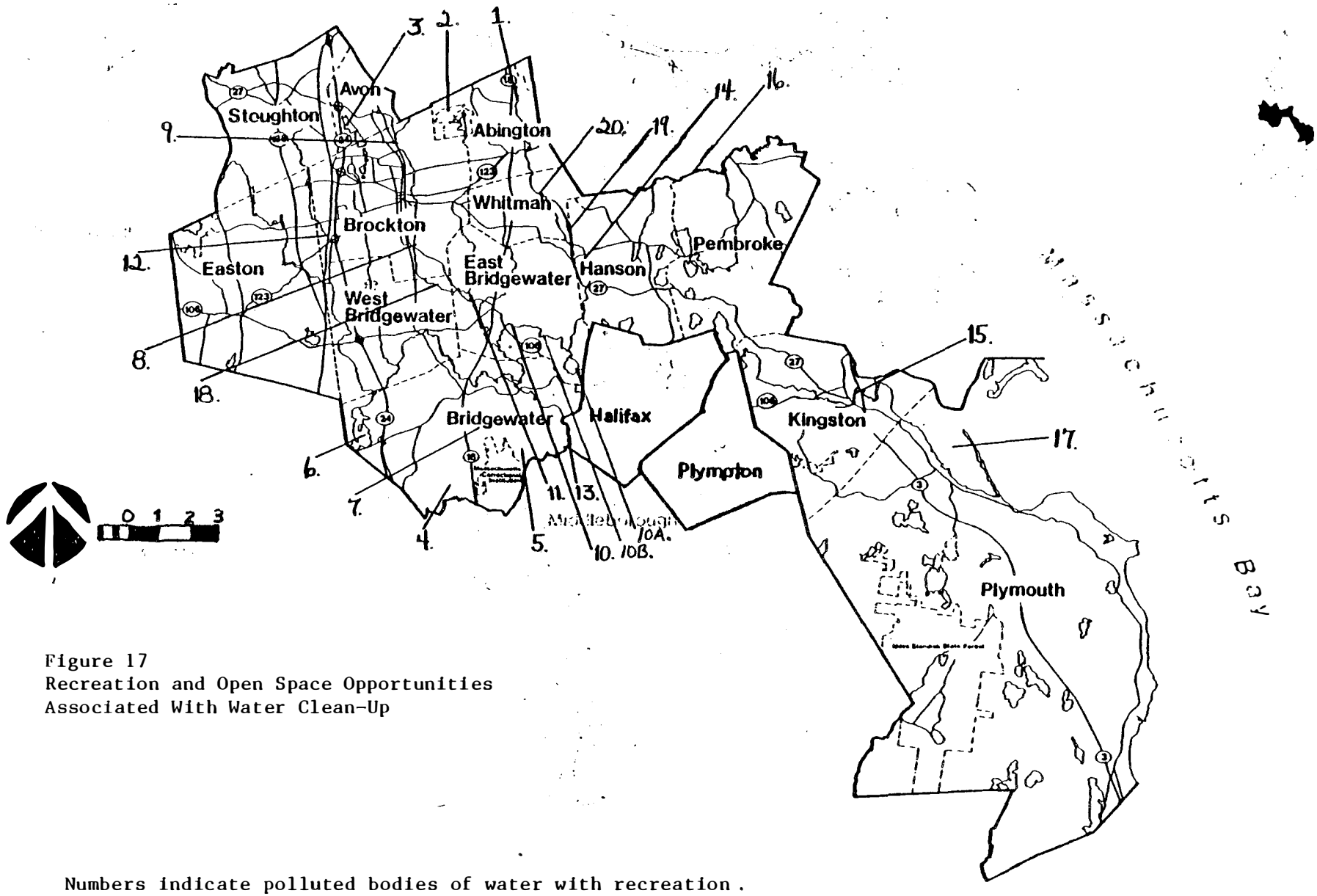


Figure 17
Recreation and Open Space Opportunities
Associated With Water Clean-Up

Numbers indicate polluted bodies of water with recreation potential and are referenced in Table 22.

REGIONAL OVERVIEW: SOUTHEASTERN REGION

The large investment of public funds in water quality management planning and pollution control facilities means the public is entitled to the benefits of clean water. Water quality standards are the heart of all water quality management programs; therefore, there is a strong link between water cleanup efforts and recreation.

The Federal Water Pollution Control Act as amended in 1977 ensures all waters meet Class "B" water quality, which in effect means suitable for water contact recreation or "fishable/swimmable."

The Act further directs, in Section 208 and Section 201, that grantees assess recreation and open space opportunities as a part of this wastewater cleanup effort. Section 201 directives focus on wastewater treatment; Section 208 also includes opportunities that can be expected to result from improved water quality. Thus, the remainder of this report examines first regionally, and then town-by-town, the recreation and open space opportunities that can be expected to result from water cleanup, both the potential use of lands associated with treatments works and increased access to water-based recreation.

A. Supply and Demand

The Southeastern Region has 47,217 acres of land that are designated as recreational, according to the Massachusetts State Comprehensive Outdoor Recreation Plan. There are 245 Intensive Recreation Areas, 133 General Recreation Areas, and 130 Natural Areas. (See Mass. State Comprehensive Outdoor Recreation Plan.)

The above plan also documents the need for additional recreation areas, most notably for swimming, boating, hiking, bicycling, tennis, and golf. Much of this demand could be met through multiple-use opportunities investigated in this report.

B. Opportunities

Treatment Facilities

Potential multiple uses of treatment facilities include boat launch ramps on treatment plant sites; informal picnic areas on open spaces on the site of reseeded sludge beds; and hiking/bicycling trails on easements for interceptor lines.

There are twelve (12) completed wastewater treatment plants, fifty-six (56) pump stations, and thirty-six (36) interceptors in the Southeastern Region.

Table 23 prioritizes, on both a regional and community basis, the multiple use potential of publicly owned treatment facilities in this region. The facilities are ranked according to their potential for development and use by the public, assuming that funding is available and that the communities involved are committed to the multiple use concept.

In all, five criteria are used to evaluate the interceptors. These criteria are as follows:

a. Number of owners of interceptor easements or rights-of-way;

b. Accessibility of interceptor route to the public;

c. Dimensions (length and width) of right-of-way:

d. Location of interceptor. Interceptors located under paved roadways receive a low ranking.

e. Proximity of right-of-way to areas of recreational, historical, educational, or environmental significance.

Criteria for Treatment Plants and Pump Stations

a. available open space on site

b. access to water - e.g. boat launch, fishing

c. accessibility to the public

d. proximity to or linkages with areas of recreational, historical or environmental significance

e. physical site compatible (e.g. not excessively steep slope, etc.)

One of the best examples of multiple use opportunities for wastewater treatment facilities in the Southeastern Region is a hiking/biking/jogging path along the North Dartmouth and Main Interceptors in the Town of Dartmouth.

Polluted Water Bodies

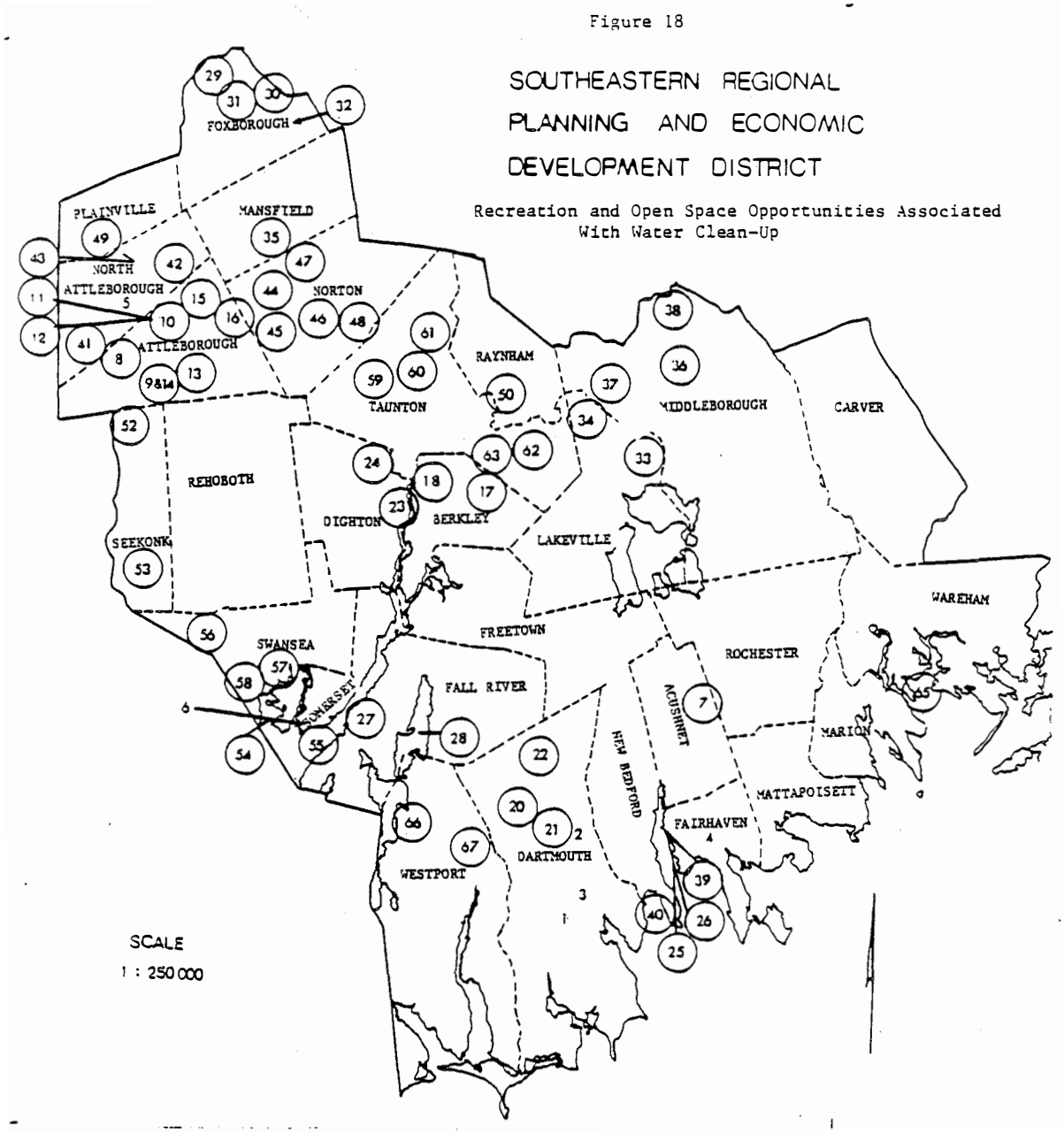
There are many multiple-use opportunities for recreation involving polluted water bodies. These include: boating, swimming, fishing, picnic areas, hiking paths, nature trails, and boat launching ramps.

Sixty-two polluted water bodies (including numerous lakes, rivers, and ponds) were investigated in the Southeastern Region and are ranked in Table 24 according to the following criteria: existing recreational facilities (town only or broader public, not private); other public ownership of property, accessibility to public; type of water pollution problem, and types of multiple-use opportunities.

Table 23 - Southeastern Region Treatment Facilities: Potential Projects

Town	High	Medium	Low
Dartmouth			1. Small playground or park at Dartmouth WWTP.
	2. Hiking/biking/jogging path along the North Dartmouth Interceptor.		
	3. Hiking/biking/jogging path along the Main Interceptor.		
Fairhaven	4. Hiking/biking/jogging path along the Fairhaven Interceptor.		
North Attleborough			5. Park, playground, or baseball field at the North Attleborough WWTP.
Somerset		6. Picnic area/ resting spot at the Somerset WWTP.	

Figure 18



Numbers are referenced in Tables 23 and 24.
Circled numerals are polluted bodies of water with recreation potential.
Other numerals indicate a potential recreation project at a treatment facility.

Table 24 - Southeastern Region Polluted Water Bodies: Potential Projects

Town	High	Medium	Low
Acushnet	7. Swimming, boating, fishing, picnicking, and nature study areas along the Acushnet River.		
Attleborough		8. Fishing, boating, picnicking, and hiking along the Seven Mile River.	
		9-15. Canoeing, row boating, sailing, fishing, and hiking along the Ten Mile River, Farmers Pond, Blackington Pond, Mechanics Pond, Dodgeville Pond, Hebronville Pond, and Bungay River.	
		16. Nature study areas, picnicking, canoeing, and row boating along Chartley Pond.	
Berkley		17. Fishing, canoeing, sailing, picnicking, and nature trails along Cotley River.	
	18. Swimming, fishing, canoeing, sailing, picnicking, and hiking along the Taunton River.		

Table 24 (continued)

Town	High	Medium	Low
Carver			
Dartmouth		20. Sailing, row boating, canoeing, fishing, and picnicking along Noquochoke Lake.	21. Hiking along Paskamaset River.
		22. Sailing, row boating, canoeing, fishing, and picnicking, along Cornell Pond.	
Dighton	23. Swimming, boating, fishing, picnicking, and hiking along the Taunton River.		
		24. Canoeing, fishing, picnicking, and hiking along the Three Mile River.	
Fairhaven	25-26. Swimming, fishing, boating, picknicking, and hiking along the Acushnet River, and New Bedford Harbor.		
Fall River			27. Boating and fishing along the Taunton River.

Table 24 (continued)

Town	High	Medium	Low
Fall River	28. Swimming, fishing, boating, picnicking, and hiking along South Wattuppa Pond.		
Foxborough	29-31. Swimming, row boating, canoeing, sailing, picnicking, fishing, and hiking along the Neponset River, Neponset Reservoir, and Crackrock Pond.		
		32. Fishing, picnicking, canoeing, row boating, and hiking along the Rumford River.	
Lakeville		33. Fishing, canoeing, row boating, and hiking along the Nemasket River.	
		34. Nature study trails, and hiking along Poquoy Brook.	
Mansfield		35. Fishing, row boating, canoeing, picnicking, and hiking along the Rumford River.	

Table 24 (continued)

Town	High	Medium	Low
Middleborough		36-38. Canoeing, row boating, fishing, picnicking, nature trails, and hiking along the Nemasket, Poquoy, and Taunton Rivers.	
New Bedford		39. Fishing, boating, and picnicking along the Acushnet River.	
	40. Swimming, fishing, boating, sailing, and picnicking along Clark Cove.		
North Attleborough		41. Fishing, hiking, and nature study areas along the Seven Mile River.	
		42. Boating, fishing, camping, and picnicking along the Bungay River.	
			43. Canoeing, row boating, and fishing along the Ten Mile River.
Norton	44. Swimming, fishing, and small craft boating along the Wading River.		
			45. Fishing and small craft boating at Chartley Pond.

Table 24 (continued)

Town	High	Medium	Low
Norton		46. Swimming, fishing, and boating along the Rumford River.	
			47-48. Fishing, and boating along the Norton Reservoir and Three Mile Rivers.
Plainville			49. Fishing, canoeing, row boating, along the Ten Mile River.
Raynham		50. Boating, fishing, picnicking, and hiking along the Taunton River.	
Rehoboth			
Seekonk	52-53. Greenbelt, fishing, hiking, and picnicking along the Ten Mile and Runnins Rivers.		
Somerset		54-55. Swimming, fishing, boating, picnicking, and hiking along the Lee and Taunton Rivers.	

Table 24 (continued)

Town	High	Medium	Low
Swansea	56-58. Fishing, boating, swimming, and picnicking along the Lee and Cole Rivers.		
Taunton			59-60. Fishing, and boating along the Three Mile River and the Mill River.
		61-63. Swimming, fishing, boating, picnicking, and hiking along Lake Sabbatia, the Taunton River, and Cotley River.	
Wareham			
		65. Boating, swimming, fishing, and picnicking along the Wareham River.	
Westport	66. Swimming, fishing, boating, picnicking, and hiking, along South Wattuppa Pond.		
		67. Sailing, row boating, canoeing, fishing, and picnicking along Noquochoke Lake.	

REGIONAL OVERVIEW: CAPE COD

The cleanup of Massachusetts' waters has made new open space and recreational opportunities possible. This same cleanup increases shoreline land value and, in many cases, has spurred development. Unfortunately, all too frequently, such development has restricted public access to these waters. However, the large investment of public funds in water quality management plaaning and pollution control facilities means the public should also have a right to the benefits of clean water.

The goal of the Federal Water Pollution Control Acts as Amended in 1977 is to ensure all waters meet Class B water quality. Class B is commonly referred to as the "fishable-swimmable" class which means suitable for water contact recreation. This already suggests a strong link between water cleanup efforts and recreation.

The Act further directs, in Section 208 and Section 201, that grantees assess recreation and open space oppotunities as a part of this wastewater cleanup effort. Section 201 directives focus on wastewater treatment; section 208 also includes opportunities that can be expected to result from improved water quality. Thus, the remainder of this report examines, first regionally, and then town-by-town, the recreation and open space opportunities that can be expected to result from water cleanup, both the potential use of lands associated with treatment works and increased access to water based recreation.

A. Supply and Demand

Cape Cod has a total of 41,005 acres of land devoted to recreation. According to the 1978 State Comprehensive Outdoor Recreation Plan, a total of 302 sites, 190 are intensive recreation areas (high density, swimming pools, tennis courts); 75 are general recreation areas (bicycle paths, picnic areas, boat ramps); 24 are natural areas (undeveloped areas, hunting, fishing, hiking, nature study); and 13 are historical/ cultural sites. For the Cpae Cod area swimming is the most popular recreation activity with nature walking the second most preferred. Cape Cod's critical facility needs are camping sites, both tent and trailer, swimming (non-pool) and motorboating.

B. Opportunities

Treatment Facilities

Potential multiple uses of proposed treatment facilities on the

Cape could include camping sites for both tents and trailers, and hiking and biking trails on easements for interceptor lines.

There are two completed wastewater treatment plants in Barnstable County, with several currently in the planning stages.

The advantage of working with proposed facilities is that both recreational and wastewater facilities can be designed and constructed simultaneously. A significant cost savings can be realized, especially in construction. Furthermore, EPA's policy is to pay up to the cost of an equivalent "single purpose" facility, which means that costs for items like site restoration could be applied toward the recreation components.

The criteria used for assessing treatment plants and pump stations were: available open space on the site; access to water (e.g. boat launch, fishing); accessibility to the public; proximity or limitages with areas of recreational, historical or environmental significances; and physical site compatibility (e.g. no excessively steep slopes, etc.). The criteria used to evaluate interceptors were: Number of owners of interceptor easements of rights-of-way. Whether easements already allowed public access: accessibility of interceptor route to the public; dimensions (length and width) of right-of-way; location of interceptor (actual placement cross-country) and its proximity to areas of recreational, historical or environmental significance (schools and libraries were also included).

Polluted Water Bodies

There are many multiple use opportunities for recreation involving polluted water bodies. These include boating, swimming, fishing, shellfishing, picnic areas, camping, hiking, nature study, hunting and boat launching ramps.

There were several polluted rivers and harbors investigated on Cape Cod. The following criteria were used to evaluate the water bodies: Existing recreational facilities (town only or broader public, not private); other public ownership of property, accessibility to public; type of water pollution problem, and types of muliple-use opportunities.

The polluted water bodies mentioned are Barnstable Harbor, Wellfleet Harbor, Provincetown Harbor, and the Herring River in Harwich. All of these are classified "SA" or "SB" with restricted shellfishing due to failing septic systems. This problem is especially evident to the summer months when the population density increases. See Table 26 for a summary of recommended actions.

Table 25 Cape Cod Treatment Facilities: Potential Projects

Sandwich	Public access to Old Harbor and/or on-site recreation facilities in association with the proposed wastewater treatment facility at Ox Pasture.

Table 26 Cape Cod Polluted Water Bodies: Potential Projects

Barnstable	Shellfishing in Barnstable Harbor in addition to the current boating, fish and wildlife production, and fishing if failing septic systems near the harbor were corrected.
Provincetown	Shellfish beds in Provincetown Harbor could be reopened to supplement the current boating, fish and wildlife propogation, fishing and bathing, if untreated municipal wastes and storm drains discharging directly into the harbor were corrected.
Sandwich	Shellfishing could be reopened in Mill Creek in addition to the current boating, fish and wildlife propogation, fishing and bathing, if pollution from storm drain runoff and infiltrating from on-lot sewers could be stopped.
Wellfleet	Shellfish beds could be reopened in Wellfleet Harbor in addition to the current recreational boating, fish and wildlife propogation, fishing and bathing, if pollution from subsurface disposal from private septic systems, restaurants and trailer parks could be stopped.

REGIONAL OVERVIEW: THE ISLANDS

The cleanup of Massachusetts' waters has made new open space and recreational opportunities possible. This same cleanup increases shoreline land value and, in many cases, has spurred development. Unfortunately, all too frequently, such development has restricted public access to these waters. However, the large investment of public funds in water quality management planning and pollution control facilities means the public should also have a right to the benefits of clean water.

A. Supply and Demand

The Islands, Gosnold, Martha's Vineyard and Nantucket have a total of 13,782 acres of land devoted to recreation. According to the 1978 State Comprehensive Recreation Plan, out of a total of 95 sites, 35 are intensive recreation areas (high density, swimming pools, tennis courts); 36 are general recreation areas (bicycle paths, picnic areas, boat ramps); and 24 are natural areas (undeveloped areas, hunting, fishing, hiking, nature study). In terms of acreage/1,000 population, Nantucket leads the state because of its low year-round population base and its large tracts of conservation land. For the Islands, swimming (non-pool), tennis, and nature walking are the most popular recreational activities, with bicycling and sailing the second most preferred. The Islands critical facility needs are camping sites, both tent and trailer.

B. Opportunities

Treatment Facilities

Potential multiple uses of proposed treatment facilities on the Islands could be nature study trails for the viewing of wildlife and bird populations, hiking and biking trails, and camping sites for both tents and trailers.

On Martha's Vineyard there is one completed wastewater treatment facility in Edgartown and one currently in the planning stages for Tisbury. Nantucket is currently in Step I facilities planning for upgrading the existing primary treatment system. Table 27 presents the opportunities for multiple use of the treatment facilities.

The advantage of working with proposed facilities is that both recreational and wastewater facilities can be designed and constructed simultaneously. A significant cost savings can be realized, especially in construction. Furthermore, EPA's policy is to pay up to the cost of an equivalent "single purpose" facility, which means that costs for items like site restoration could be applied toward the recreation components.

Polluted Water Bodies

There are many multiple use opportunities for recreation involving polluted waterbodies. These include boating, swimming, fishing, shellfishing,

picnic areas, camping, hiking, nature study, hunting and boat launching ramps.

The polluted waterbodies investigated were Cuttyhunk Pond and Nantucket Harbor. Both of these have restricted shellfishing due to failing septic systems. This problem is especially evident in the summer months when the population density increases.

Table 27 Islands Treatment Facilities: Potential Projects

Edgartown	1. Nature study trail for the wildlife and birds that harbor in the shallow ponds and marsh-like vegetation adjacent to the treatment plant. Access to the nature trail could be provided from the existing bike trail.
Nantucket	2. Educational signs and/or beach access associated with the innovative and alternative collection and treatment facilities planned for the Island.

Table 28 Islands Polluted Water Bodies: Recommended Projects

Nantucket	1. Health Agent continue to distribute pamphlets encouraging boaters to use the pump out facilities in the Boat Basin in Nantucket Harbor.
Gosnold	2. The facilities plan should address recreational boat discharges into Cuttyhunk Pond during the summer months. Cleaning up those discharges would permit reopening the shellfish beds.

Part Three: Implementation Projects

The identification of "pilot projects" or implementation projects for recreation/open space opportunities has been carried out in two ways. In publishing and distributing areawide volumes of this report on Recreation and Open Space Opportunities Associated With Water Clean-Up (i.e. Volumes 2 - 13 of this report), an original cover letter with the areawide report (or town's section) was sent to each town's Selectmen or Mayor, Board of Health, Town Engineer or Public Works Department, Sewer Commission, Conservation Commission, and Recreation or Parks Department. By sending an individual letter to each town board involved in potential multiple use projects, corrections and update of the areawide plans were sought, as well as an indication of potential multiple use projects now being considered. Appendix C summarizes the comments received and the DEQE responses to these comments.

The second method of potential project identification is through the review of current Facilities Plans by the Division of Water Pollution Control, Construction Grants Personnel. Recreation and open space opportunities are now assessed, along with other facility planning requirements of each project.

Table 29 shows potential projects identified as of May 1981. Under "Source of Information and Contact", the DWPC project manager is listed if the project has been identified in the Facilities Plan.

Table 29
Statewide Recommended Projects

Town or City	Agency	Project	Potential Recreational Use	Status	Source of Information and Contact
Arlington	Recreation Facilities Committee	Clean-up, water filtration of Arlington Reservoir for swimming pool	Swimming	In design	Don Vithers Chairman, Recreation Committee
Belchertown	Board of Selectmen; Town Planning Department	Metacomet, Arcadia, Holland Lake restoration	Swimming, boating, fishing	Insufficient funds for recreational development and water clean-up planning	Karen Croak, Town Planner
Boston	Boston Water & Sewer Commission	Proposed wet weather conduit Fort Point Channel & East Side Interceptor Replacement	Pedestrian mall, open space and/or small boating access	Institutional arrangements for recreation funding. Engineering problems in design of pipeline. Multiple use project may not be possible due to increased cost to correct engineering problems.	Felicia Clark-consultant to BRA and others Charlie Button-Boston Water & Sewer Commission
Boston	MDC	Proposed CSO Project-Charles	Fens and Olmstead Park	Final CSO alternatives not determined	Eugenie Beal-Boston Conservation Commission

Table 29 (continued)

Town or City	Agency	Project	Potential Recreational Use	Status	Source of Information and Contact
Boston	MDC	Proposed Dorchester CSO Abatement Improvement (Pine Neck Creek)	Dorchester Bay park and bikeway development. Tenean Beach improvement.	Institutional problems, cost factors project timing may preclude multiple use.	M. Connelly CZM D. Moss Boston Conservation Commission
Framingham	MDC	Farm Pond	Use of Railroad Bed along pond.	Has not been reviewed	N. Thornton DWPC
Lexington and Bedford	MDC	Proposed Millbrook Valley Relief Sewer	"Minuteman" commuter bikeway.	Right-of-way problems with Boston and Maine Railroad	B. Bernard MAPC J. Hopcroft MDC N. Thornton DWPC
Lowell	Department of Public Works and Department of Planning and Development	(Phase II interceptor and bikeway has been constructed) Phase III interceptor CSO Separation	Bikeway will be continued. Use of pipeline through conservation area.		R. Malavich Planning Director M. Caselle DWPC
Merrimac	Sewer Commission Conservation Commission	Cobbler's Brook and River Rd. Interceptors	Portions of Merrimac River Greenway	Insufficient funds for recreation open space property aquisition.	N. Tufts Merrimack River Watershed Council

Table 29 (continued)

Town or City	Agency	Project	Potential Recreational Use	Status	Source of Information and Contact
Methuen	Department of Public Works	Merrimac River Interceptor	Bikeway/hikeway to connect Haverhill	No funding or sponsor for recreation part.	F. Russo Department of Public Works G. Smith, Merrimack Valley, Plng
Springfield	Department of Public Works	Porter Lake recreational development and water clean-up	Urban Park development	Insufficient funds for water clean-up. Applied for 314 Grant.	L. Smith City Planner
Tewksbury	Public Works	Phase I Interceptor	Bikeway, hiking trail	Design complete. Time may be too short to gain recreation easements.	P. Pattison Public Works
Wellesley	Board of Public Works	Morses Pond Lake Management	Swimming, boating fishing	Needs further financial assistance.	J. Bezanson Town Engineer
Westfield	Department of Community Development	Clean-up of Westfield River	Downtown "Riverwalk Park"	Need public funds for recreation	P. Condon Physical Planner
Williamstown	Citizen's Committee on Bikeways	Existing Interceptor and Green River Shoreline	Portions of Town Bikeway system	Land aquisition, design and construction funds needed.	R. McFadden Town Engineer
Whitman	Conservation Comm.	Clean-up of Hobarts Pond	Fishing, boating and drainage improvements	Town funds are available	G. Porter Conservation Commission

Appendix A

METHODOLOGY AND PUBLIC PARTICIPATION

This study proceeded on a town-by-town basis as follows. First the polluted water bodies and the existing and proposed treatment facilities were mapped onto USGS 7½ minute quadrangle sheets. Next the existing and proposed recreation and open space areas were added to the map. Then each water body and treatment facility was examined for potential multiple use at two scales: on the site and as a component of the larger recreation system in the town. Often town treatment plant operators, engineers, planning boards, conservation commissions and recreation commissions were contacted for assistance as indicated in each town's reference section. Finally, town-by-town and regional overviews were prepared and circulated in draft to local, regional and state agencies as well as lake and watershed associations. This draft will be revised based upon comments received and then be certified by the governor and adopted by EPA as a part of the 208 water quality management plans.

The list of polluted water bodies to be studied was selected as follows. As a first cut, staff from the Department of Environmental Quality Engineering (DEQE) reviewed the 17 208 Water Quality Management Plans, the Division of Water Pollution Control (DWPC) Classification and Segmentation of Massachusetts River Basins and Coastal Areas (1976) and all the publications of the 314 Lakes Programs. These were compiled into a list.

The list with a cover letter dated September 10, 1978 from the Commissioners of DEQE and the Department of Environmental Management (DEM) was mailed for review and comment to each town's park and recreation commission and conservation commission, all lake and river watershed associations, regional planning agencies, state and federal 208 review agencies and citizens groups. The list was also published in the Berkshire Cooperative Extension Service Newsletter.

In total, 78 responses were received. They recommended the deletion of 9 water bodies, the addition of 114 and commented on 303 others. Each recommendation was reviewed with DWPC lakes and rivers sampling staff in Westboro. All but one of the recommended deletions were made. 89 of the 114 recommended additions were made. (See Table 5).

The wastewater treatment facilities were identified by reviewing the regional 208 Water Quality Management Plans, each town's 201 Facilities Plan and talking with the town's engineer, sewer commission member or town planning board. (See Table 4).

The recreation and open space sites, existing and proposed, were identified from town and regional recreation and open space plans, state agencies such as the Department of Environmental Management, the Division of Fisheries and Wildlife, Coastal Zone Management, and the Mass. Historical Commission.

Once each of the areawide volumes were published (Vols. 2-13), an original cover letter with the areawide report (or town's section) was sent to each town's Selectmen or Mayors, Boards of Health, Town Engineer or Public Works Department, Sewer Commission, Conservation Commission, and Recreation or Parks Department. By sending an individual letter to each town board involved in potential multiple use projects, corrections and update of the areawide plans were sought, as well as an indication of potential multiple use projects now being considered. The resulting corrections are incorporated in these reports and a summary of comments receeived is included in Appendix C.

Appendix B

RIGHT OF WAY AGREEMENT

THIS AGREEMENT made the day of Nineteen Hundred and Seventy Eight

BETWEEN

AND

NEW JERSEY CONSERVATION FOUNDATION, a non-profit organization and a New Jersy Corporation incorporated under and pursuant to Title 15 N.J.S., having its office at 300 Mendham Road, Morristown, New Jersey, hereinafter designated as the Party of the Second Part;

NOW, THEREFORE, for and in consideration of the sum of One Dollar ($1.00) to it and hand well and truly paid by the said Party of the Second Part, at or before the sealing and delivery of these presents, the receipt whereof is hereby acknowledge, and the said Party of the First Part being therewith fully satisfied, contented and paid, the Party of the First Part does hereby grant, bargain and sell to the Party of the Second Part, its successors and assigns, a non exclusive right of way and easement for it, its successors and assigns, to pass and re-pass freely on foot or with animals or non-motorized bicycle, in common with the Party of the First Part herein, its successors and assigns, over and across a right of way along the former Morris Canal and Towpath, as is more particularly described on Schedule A hereto annexed. Motorized vehicles shall be permitted on the land covered by this easement only for emergency, service and security purposes.

TOGETHER WITH the right of the Party of the Second Part to improve the right of way by landscaping, planting and other such considerations and to improve the property for limited recreational purposes of trails and footpaths. This right of way and easement is intended for the purpose of extending the rights of way for paths and trails of the Party of the Second Part along the Morris Canal and Towpath aforesaid over and across lands of the Party of the First Part, and it is understood and agreed that it is appurtenant thereto.

The Party of the Second Part recognizes the present use and occupation of the premises which are the subject of this easement by the Party of the First Part and agrees that there shall be no obligation or undertaking by the Party of the First Part, its successors and assigns, to construct, repair, maintain, improve or provide protection for, said right of way for the use and benefit of the Party of the Second Part hereto, or its successors or assigns. It is

further understood and agreed that the premises are the subject of a prior Easement Agreement between the Party of the First Part and the Rockaway Valley Regional Sewerage Authority as and for the operation and maintenance of an Interceptor Sewer and the parties hereto understand and agree that this Easement Agreement shall not supercede the provisions of the prior Easement Agreement between the Party of the First Part and the Rockaway Valley Regional Sewer Authority.

The Party of the First Part understands that the right and easement herein granted to the Party of the Second Part is intended for the activities common to greenbelt open spaces, outdoor education and recreational purposes. Expressly subject, however, to the reservations aforesaid, the Party of the First Part covenants and agrees not to erect any structure or buildings on the right of way without the prior consent or approval of the Party of the Second Part, its successors or assigns.

The Party of the Second Part may at any time transfer and assign the easement and interest created hereby to the New Jersey Natural Lands Trust created by Public Law 1968, chapter 425, or to any trust or other entity hereafter created by the legislature of the State of New Jersey for substantially similar purposes. If at any time this Party shall cease to function as a non-profit corporation with one of its primary purposes being the preservation of natural resources and open space (other than as the result of a merger into or consolidation with any other non-profit corporation with similar purposes), or shall be liquidated or dissolved, the easement and interest granted hereby shall thereupon be transferred and assigned to the Party of the Second Part to (a) another corporation selected by the Party which is exempt from Federal income taxation and is authorized to hold such an easement and interest in and with respect to property located within the State of New Jersey or (b) if no such corporation is then in existence then to said New Jersey Natural Lands Trust if then existing or to any other public body in New Jersey which is empowered to hold such an easement and interest.

IN WITNESS WHEREOF, the Party of the First Part has caused these presents to be signed by its proper corporate officers and caused its proper corporate seal to be hereto affixed, the day and year first above written.

By _____
President

ATTEST:

_____
Secretary

SCHEDULE A

Insert here a legal description of the lands subject to the Rockaway Valley Regional Sewerage Authority Easement Agreement.

Source: Patricia Tice, The Pathfinder: A Handbook For Citizens Planning for Multiple-Use of Federally Funded Clean Water Projects. Association of New Jersey Environmental Commissions (Draft) Environmental Protection Agency.

APPENDIX C

The following are changes in Volume 2-13 made in response to comments received from various communities, organizations and agencies. They were sent to those who received the volumes to be secured to the report as addenda. The changes are included here, organized by volume and, until further funding is provided, represent the final version of this study.

The following comments were made by the cities and towns concerning the Berkshire County Recreation report. Where required, DEQE's response to comments is included.

Alford

P.45 - A (continued) Change sentence to read. There is public access to the Green River at this time.

Sheffied

Has it been determined that pollutants are from Sheffield, or could they possibly be from Egremont?

DEQE response: According to Mass. DWPC Summary of Water Quality, 1978 there is a high coliform count in Hubbard Brook due to discharge of raw sewerage from individual homes in and around the Town. In the section on Egremont (p.54) agricultural runoff is cited as a potential source of pollution in the headwaters of Hubbard Brook.

Stockbridge

On P.98 the term "Stockbridge Bowl" is used correctly. However on P.97 change the 1st sentence in the paragraph about Stockbridge Bowl to read: "Stockbridge Bowl contains 374 acre Lake Mahkunac."

Williamstown

P.104 - Section A - 2nd para.

Change sentence to read, "The site is 3.2 acres (not 32) and is almost completely covered by treatment facilities.

The following comments were made by the cities and towns concerning the Franklin County Recreation report. Where required, DEQE's response to comments is included.

NORTHFIELD

A state owned boat ramp on the Connecticut River in Northfield was opened to the public during 1979. The Northfield Mountain Project has many trails for hiking, skiing, etc., a Riverview Picnic area, and the Munn's Ferry Camping site. There are also trails at the Northfield Inn Golf Course area, and the Town's Recreation Commission sponsors many other activities.

The suggestion of a swimming area along the Connecticut River would be inadvisable due to the fluctuation of the River; and, according to your report (page 93), "The major polluted water body in Northfield is the Connecticut River, which passes just west of the treatment plant," and clean-up of the Connecticut River, not only in the Town of Northfield, but in every Town abutting the River, in order to make the water suitable for this purpose, would be costly and require a long period of time to do so.

The proposed projects would involve land easements for crossing private properties, and a large amount of funding for the projects themselves, some of which are already in operation. We, therefore, feel that the existing recreational facilities in the Town of Northfield are sufficient at present.

DEQE RESPONSE

DEQE has made a number of proposals toward initiating recreational facilities. The Department was pleased to learn of the already existing trails for recreation.

Once again, certain proposals were made in connection with the Connecticut River clean-up, to be carried out, if possible, in a cost-effective manner. Suggestions in this section of the report should be viewed according to need, since the Town appears to have ample recreation sites at the present time.

NEW SALEM

The Eagleville Pond Association would like to have a diagnostic feasibility (314) study conducted. In response to the study, a public right-of-way on Lake Rohunta should be increased on state forest land.

According to the Eagleville Pond Association, the Lake is stocked with trout. There is also a high density of aquatic weeds this year (summer 1980) and water quality improvement is needed.

DEQE RESPONSE

Since most of Lake Rohunta's shore and its water rights are privately owned, the eligibility of this Lake for a publicly funded study is doubtful. However, public access could be expanded on or near the state park land as well as at Route 2 and 202 which are public right-of-ways. Improved septic system maintenance and homeowner education on fertilizer and de-icing materials would be possible activities for the Pond Association to improve water quality.

SHUTESBURY

"Would like to see some solid concrete evidence of water pollution in Lake Wyola, Shutesbury." According to the Board of Health, there is no test that will definitely prove or disprove the existence of the organism giardia lamblia (cause of infections after swimming in Lake Wyola).

DEQE RESPONSE

Mr. George Bramlage, Leverett Conservation Commission has reported the presence of the organism"giardia lamblia" in the Lake. According to lake surveys done by Massachusetts Division of Water Pollution Control, there are high bacteria counts; however, giardia lamblia was not identified in the microscopic analysis. Although this organism is a flagellate and can be identified by experts in water quality, the state wide lakes survey program does not usually include this detailed analysis. The organism is a parasite sometimes found in the lower intestinal tract of the American beaver; however, man can be an alternate host.

Massachusetts Division of Water Pollution Control's Massachusetts Lake Classification Program November 1978 lists Wyola Lake as polluted, stating: "Heavily used for recreation, motorboats, cottages, beach (private), some high coliform, possible septage contamination."

Comments of the Lower Pionner Valley Regional Planning Commission.

Page 38: Bondi's Island STP should be located in West Springfield

Page 43: Connecticut River is omitted from the list of polluted water bodies in Springfield.

Page 44: The report's assessment of "excellent access" to the Westfield River in West Springfield does not currently exist, although the potential for access via public sites certainly does exist. However, dikes and railroad tracks severely inhibit access to the river's edge. Recreational opportunities for boating on the Westfield, as identified, are severely inhibited during low flow conditions and summer months when demand is high.

Page 49: The municipal base maps are largely washed out and illegible. The maps do not have a legend. The legend should either accompany each map or be inserted prior to the Agawam section, rather than being placed at the end of the report. The municipal base maps used throughout the report are copies of the Mass. DPW General Highway Maps, Regional Series. Unfortunately, the DPW has copyrighted these graphics and requires acknowledgement.

Page 50: The report states that, "there have been numerous, as yet unsuccessful efforts to restore the Atlantic Salmon to the Connecticut River." Judging by the number of salmon lifted over the Holyoke Dam this year, most observers feel the restoration program has been quite successful to date.

Page 56: The report states that, "Lake Metacomet and Aracadia Lake .... have been given a classification of below "B" for surface water quality". Such classification are given only to running water and certain surface impoundments, not to lakes. The Division of Water Pollution Control has classified lake water quality in its report Mass. Lake Classification Program. Lakes are assigned severity points based on six water quality parameters. Based on test results for these parameters, Belchertown's lakes were classified as follows:

Lake Name	Severity Points	Trophic Level
Holland Lake	8	Mesotrophic
Metacomet Lake	7	Mesotrophic
Arcadia Lake	6	Oligotrophic

Page 76: The report states, that "with water clean-up, the towns could create a rich bird sanctuary that was once evident in the Arcadia Wildlife area", an example of subjective judgement.

Page 108: Is the Fannie Stebbins Memorial Wildlife Refuge owned by the Massachusetts Audobon Society?

Page 156: The reference to Robinson State Park is incorrect, it should be Mittineague Park.

DEQE response to comments of the Lower Pioneer Valley Regional Planning Commission.

Page 36: The Bondi Island Treatment Plant is actually located across the Connecticut River in Agawam, but was included in the Springfield discussion because it is operated by the city.

Page 43: The Connecticut River is severely polluted because of industrial discharge upstream and should have been included on P.43 in the list of polluted water bodies of Springfield.

Page 44: The potential for public access to the Westfield River does exist if the water quality were improved. Therefore, the assessment of "excellent access" is premature, and is changed to "potential access".

Page 49: The municipal base maps are not clearly printed with background data (for this reason copyright data is meaningless), however they do show the relationships between existing wastewater facilities and open space, as intended. The following statement is hereby added to each map: Legend is found on the last page of this report. Please fold out legend for more convenient use.

Page 50: Before 1976 young salmon were released and failed to return; however, since 1976 there have been several successful attempts made at releasing salmon and having them return. This restoration program has improved since that time, but it is a very slow process. Change the statement on page 50 to read . . . . "There have been numerous, as yet unsuccessful efforts to permanently restore Atlantic Salmon to the Connecticut River.

Page 56: Under B, Polluted Water Bodies, the first paragraph is in error and should read "Lake Metacomet and Lake Holland have been rated Mesotrophic by the Division of Water Pollution Control, while Lake Arcadia is still oligotrophic. Arcadia and Metacomet are shallow and have been developed." Remainder of the paragraph remains the same.

Page 76: Recommendations in this report are, sometimes, of a subjective nature. This is necessary to reflect the aesthetic impact of water clean-up on recreational quality. Unfortunately comparisons such as stated here, are the only measure or way we can indicate examples of the aesthetic impact of water quality improvement.

Page 108: After checking further with Mass. Audubon Society, it was ascertained that the Fannie Stebbins Memorial Wildlife Refuge is, in fact, not owned by them.

Page 156: DEQE stands corrected on the reference to Robinson State Park: This should be changed to Mittineague Park.

The following comments were made by the towns and cities concerning the Lower Pioneer Valley Recreation report. Where required, DEQE's response to comments is included:

Agawam

The Town, in conjunction with the MDPW, has completed the final design of a bike path along River Road from School Street to Borgatti Field. Authorization has been obtained from the Hampden County Commissioners to construct and maintain this facility. A grant contract for $108,000 has been offered to the Town by the MDPW. The Town Council has appropriated the local 25% share of the project but has failed to authorize temporary borrowing for the 75% state reimbursement portion.

Other potentially significant multiple use locations are not mentioned in the report such as the Cohen conservation area at the confluence of the Westfield and Connecticut Rivers which also is where the Agawam/Longmeadow sewer force main crosses the Westfield River to Bondi Island.

DEQE RESPONSE: Add the Agawam/Longmeadow sewer force main as a potential recreation site on page 5.

Belchertown

The town is interested in recreational development of the lakes area. Belchertown also wishes to implement a sewer avoidance program.

Chesterfield

The Lake Damon Corporation commented on the fact that Damon Pond is not public and not polluted.

DEQE RESPONSE: Strike Section B from page 64.

Springfield

The Department of Public Parks recently commissioned a study of all water bodies which fall under its jurisdiction. The purpose of this report was to determine the present condition of the city's lakes and ponds and to formulate recommendations and a program of lake restoration.

As a result of this study, the Park Department is in the process of applying for funds from the E.P.A. under the 314 Grant Program. These monies will be used for the restoration of Porter Lake in Forest Park. Porter Lake was one water body cited in the D.E.Q.E.'s "Recreation and Open Space Opportunities Associated With Water Cleanup" report as requiring restoration work.

Hopefully, this project will be funded in the near future and will prove to be the city's first step in the cleanup and restoration of all lakes and ponds within Springfield's boundaries.

It is anticipated that if such a program comes to fruition, the sundry recreational opportunities associated with clean lakes and ponds will be upgraded accordingly.

Westfield

The "riverside mini parks" concept is an idea that our department has been working on over the past two years. The Riverwalk Park as it has been called would be the first stage of a city-wide green belt system that would use the rivers as its organizing element. The first stage of the riverwalk, for which drawings already exist, would link the two downtown area recreation facilities that lie at the Westfield River's edge by clearing an existing flood control dike. Plans call for clearing undergrowth, providing benches, and allowing direct pedestrian access to the river at many points. Proposed financing would be a combination of municipal and federal Heritage Conservation Recreation Service funds. While the City has chosen to apply to the HCRS this year for improvements to Municipal Field, Arm Brook Recreation Area and Tekoa Park, we are interested in resources that would facilitate the development of a Riverwalk Park. We also however, do not feel that the private financing of such an endeavor is realistic.

As for the second suggestion, that of utilizing the substantial acreage of the sewage treatment plant site for recreation, that option has been thoroughly evaluated by this department and determined not to be a priority at this time for the following reasons:

1. Despite the fact that the site seems close to the center of the City, because it sits on the far side of the river in relation to the city center the effective distance of the site from the center is in the order of 2.5 miles.

2. Stanley Park a privately owned public park lies only 1.5 miles from the city center. This park includes 45 acres of passive recreation/wildlife sanctuary on a riverside setting. Since this is the type of use that the treatment plant site would be best developed for it would seem to be an unnecessary duplication of facilities.

3. Because of the seclusion of the treatment plant site, improvements would be particularly subject to vandalism.

4. This land (treatment plant site) is viewed as necessary for the future expansion of the waste water treatment facility.

DEQE RESPONSE: On page 149, delete second paragraph under "Treatment Plant" and insert: "This site has a low potential for recreational use due to its isolation and the lack of demand for another passive recreation site in this area". On page 154, Section C delete recommendation #1.

HW/LS/df

Comments of the Division of Water Pollution Control Westboro office.

On page 84 East Waushacum Pond has been classified as oligotrophic, based on the latest sampling information. It is therefore not really a "polluted" water body as such but it is a primary recreation resource for the town which is being carefully studied to prevent degradation. Also under D Open Space and Recreation Data, #1 is Sholan Park.

DEQE Response

The above corrections should be made on page 84 of the report.

The following comments were made by the cities and towns concerning the Montachusett Recreation report. Where required DEQE's response to comments is included.

AYER

The Spectacle Pond Pumping Station is Phase III of the sewer project and may not be built at all. In addition its close proximity to the railroad tracks and to a well field makes this area a poor site for a recreation facility.

The number three pumping station at James Brook and Groton School Road will not be replaced. The plans for the East Side Sewer System, (beginning at the bottom of page 47) have been changed. This cross country route near the railroad tracks will not be used, but rather a route along Sandy Pond Road. The interceptor therefore will not have recreation potential.

The abandoned treatment plant area will be used for storage by the Ayer DPW and would therefore not be appropriate as a recreational site.

The pollution problems as well as the recreation potential described for Fletcher Pond should be extended to Grove and Plow Shop Ponds. This area includes a Town Park and Elderly Housing. Grove and Plow Shop Ponds show severe nutrient weed and sediment problems, hampering their potential recreational use.

DEQE Response

On page 47, in the first paragraph delete the second sentence and the last sentence and add the following: This site is also near a well field. For all of the above reasons the site does not have recreation potential. On page 37, delete #10.

Delete the third paragraph on page 47.
On page 37, # (4), delete the words "and proposed".

Delete the last 2 lines on page 47 and the first 5 lines on page 48. Add instead the following:

The east side interceptor will be within the right of way of Sandy Pond Road and does not have recreation potential

Delete #13 on page 37.

Page 46, under "Note on Abandoned Sites" delete the last two sentences. Add the following:

These sites will be used by the Ayer DPW for storage of equipment and supplies.

Page 49 under C., delete #2.
Page 37 delete #9

Although we agree that Grove and Plow Shop Pond deserve study at some future date we attempted to prioritize polluted water bodies in each Massachusetts community by distributing and then revising a list of these water bodies in the spring of 1980. At that time Fletcher's Pond was added to the list because the town requested that the MRPC study this water body along with Sandy Pond. The summary in this report reflects that study. We have no further information on the pollution problems in Grove and Plow Shop Ponds.

Leominster

Barretts Pond, located on Chestnut Street extention, has been used as a swimming area in the past. A recent study by the city reveals turbidity problems and bacterial problems are associated with a few failing septic systems and with run-off from the surrounding area. Possible solutions include connecting the remaining houses to the sewer and a diversion system for storm water. In addition, park development would make this a potential water-based recreation site for Leominster residents.

DEQE Response

Barretts Pond was inadvertently ommitted from the recreation report. The above information should be added to page 76. On page 41, Barretts Pond-Swimming should be added in the "High" column opposite Leominster and numbered 65A.

WESTMINSTER

The Planning Board recommends that the Town purchase land between Hager Park and Wymans Pond for recreation land. In addition the Wyman Lake Association is unclear as to the overall purpose of this study.

DEQE Response

The above mentioned proposal should be noted on page 92 under

Wyman Pond. This proposal would increase public access and recreational opportunities in the Wyman Pond area. The overall purpose of this study, including examples and funding information is examined in detail in full copies of Volume 5 which were sent to each selectmen's office in the region and to MRPC. Basically each report provides a description of water based recreational opportunities for future planning of high priority projects. The Facilities Planning Program for wastewater treatment, the 314 and State Clean Lakes Program, and the State Self Help and Conservation Program for open space acquisition are examples of current programs which will use this report as a part of the information base.

Comments of the Central Massachusetts Regional Planning Commission:

Page 36: Second paragraph, fifth line, the Mumford River is in Douglas (not Mumford).

Page 37: On Table 4, Grafton should appear on the chart between Douglas and Hopedale. For #4 and #5, the treatment plant and the Quinsigamond River are in Grafton. (Map on page 48 is correct)

Page 52: Under "D. References" #5. Larry Brodeur is the name of Auburn's Executive Secretary.

Page 53: On the Barre Map; North is toward the far left hand side of the page. Also Brookfield, Hardwick and Webster have no maps.

Pages 60 and 61: The name of the Pond is Manchaug Pond wherever it occurs on these pages.

Page 63: Under "C. Recommendations 2." The first sentence should begin "The Douglas Park Department . . . ."

Page 84: Cast section, the pond's name is Singletary.

Page 86: Under "C.1." The size of the Conservation Commission Land is 22 acres.

Pages 112, 114, 115: The name of the Pond is Manchaug wherever it occurs on these pages.

DEQE RESPONSE: We recommend making the above corrections in the indicated locations. As indicated, North on some of the report's maps is located toward the left hand side of the page, rather than the top. The maps for towns on the following pages are so oriented:

Page 53	Barre
Page 62	Douglas
Page 85	Millbury
Page 94	Northbridge
Page 116	Sutton
Page 126	Westborough

In some cases there were few or no recommendations for multiple use projects. For these towns no map was included.

The following comments were made by the towns and cities concerning the Central Massachusetts Recreation report. Where required, DEQE's response to comments is included:

Brookfield

Failing septic systems and sewage treatment plants discharging upstream are possible sources of pollution and are causing weed problems at Quaboag Pond (page 57). The Town would like to clean-up the Pond and provide the area with a boat ramp.

DEQE RESPONSE: We believe the write up on Quaboag Pond at the bottom of page 57 should stand as is but would add that the town would be interested in a clean-up and recreation project on the pond.

Millbury

Under the Blackstone River section page 84, the second paragraph down, in the last sentence the Blackston River is a valuable resource for Millbury residents. (not Mendoa Residents as stated)

The report states in the second paragraph from the bottom that, "All five of the above ponds . . . ." It should state, "All four of the above ponds . . . "

The report states in the last paragraph that, "Penn Railroad is also scheduled to turn over a 3 mile stretch of railroad spur to Millbury's Park Department for the purpose of developing a jogging path and skimobile trail." The railroad is actually going to turn the site over to the Commonwealth Executive Office of Transportation for future railroad use. In the interim, the Parks Department can lease the area.

DEQE RESPONSE: We recommend making the above corrections on page 84 of the report.

Worcester

The report refers to Broad Meadow Brook as Meadow Brook on pages 128, 130, and 131. Also, the river is an open channel to Millbury and eventually to the Blackstone River outside of the City of Worcester not, within the city limits.

DEQE RESPONSE: Above corrections should be made to the report.

HW/df

Comments of the Northern Middlesex Area Commission

On the Acknowledgements page make the following changes under "Northern Middlesex Commission": Ralph Basner and Anita Pascucci.

We also feel that the Merrimack River has a high recreation potential in Dracut as well as the other communities, particularly since the Lowell Bikeway is now complete, and recreational use of the shoreline through Dracut would be a way to continue this recreation resource to the East.

DEQE Response: make changes on the Acknowledgements page. On page 41 change "#7 Merrimack River" in Dracut from the "Medium" to the "High" column.

LOWELL

Page 63 - A - 3rd paragraph
The Phase II interceptor now being built is already designed for regrading as a bike path. This bike path will begin.....

Comment: Bikepath has been constructed as part of the project.

Last sentence - 3rd paragraph
The town also intends to continue the bike path along Phase III.

Comment: The City also intends to continue the bikepath along Phase III and all future Phases.

Page 64 - Map - add "7" reference Shedd Park alongside 5 & 6.

Page 65 - 1st paragraph
Change last sentence to read: "Existing recreation facilities consist of two boat launches in the city upstream of the downtown area, with a new, more efficient one in the planning stages."

Page 65 - C
1. Sewer Commission and town planner should be changed to read Department of Public Works and the Division of Planning and Development.

2. Same comment.

Page 65 - D
Add Vandenberg Esplanade to #1 State Heritage Parks. Change #5 to Fort Hill Park instead of Shedd Park. Add Shedd Park as #7.

Page 68
Under Historic Register add Merrimack - Middle Street Historic District

DEQE Response

The above comments are appreciated and should be appended to the report in the locations indicated.

PEPPERELL

Page 69 under B Polluted Water Bodies
The Nashua flows North from Groton and Pepperell to Nashua, N.H. where it empties into the Merrimack River.

Second paragraph add a previous sanitary landfill in Groton. Also add: Pepperell Pond is the impoundment between Main Street in Pepperell and Rt. 119.

Page 71
At the top of the page the statement: "The Nashua is used extensively for canoeing and fishing", is overly optimistic.

In the second paragraph much of the remaining undeveloped land along the Northern Reach of the Nashua in Pepperell has enormous potential for flood control and recreation.

Under D - Open Space and Recreation Data #1
There is no public access but a conservation restriction.

#4 is the Carr Estate which is private, and the Conservation Commission is negotiating to purchase a portion of the property.

#5 is the Town Forest.

DEQE Response

DEQE appreciates the comments and hereby adds the recommended changes above, except for the comment on the first sentence at the top of Page 71. From a regional point of view, the Nashua is used extensively for canoeing and fishing as compared with other natural water bodies used for this purpose. The Nashua River Watershed Association canoe races, in fact, grow in popularity each year.

TEWKSBURY

Page 74
Under Ames Pond change the acreage to acres. In general the Town of Tewksbury is interested in implementing recreation/water cleanup projects and may use a bikeway or hiking trail over some interceptor routes as a mitigating or site restoration measure. Construction is scheduled to begin on the new sewer projects in the summer of 1981.

DEQE Response

Change the Ames Pond acreage on page 74 to 82 acres. The Tewksbury interceptor construction will lend itself to multiple use for bikeways or a hiking trail provided appropriate recreational easements can be

obtained in time. A recreational use easement must be obtained from all private property owners before appropriate site restoration following construction.

The following comments were made by the cities and towns concerning the Merrimack Valley Recreation report. Where required, DEQE's response to comments is included.

Haverhill

Page 60 - Section A - Second paragraph

Riverside playground appears to be confused with the Bradford Country Club. Riverside playground is located at #15 on the map P.63. Bradford Country Club is located close to the treatment facility but not contiguous to it, #16 on the map P.63. Bradford Swim and Recreation Center is contiguous to the treatment facility. However, it is private and not included in the listing.

Page 62 - Section B - Little River - Paragraph 2

Little River is culverted for about 2,000 feet before it joins the Merrimack in the downtown area. While a footpath along the Little River is desirable, it would not enhance the downtown area which is adjacent to the Merrimack.

DEQE Response

The above comments are appreciated and should be appended to the report in the locations indicated.

Merrimac

As an update to the reports sewer construction is in full swing now in the Town of Merrimac.

The Town is applying to place in conservation/recreation status a 19 acre parcel along Cobbler's Brook. This will create a vital link in the Cobbler's Brook Greenway which extends from the pocket park on the Merrimack to the N.H. border.

The land between the River Rd. and the water should be part of the developing Greenway for the entire Merrimack.

Merrimac is taking care of Lake Attitach (one-third) but Amesburg has post-poned indefinetely plans to sewer its portion.

The Conservation Commission is also trying to protect the watershed area (Back River) against development.

DEQE Response

DEQE is gratified to see that the comments, either proposed or initiated by the Town and Conservation Commission, are in concurrence with those proposed in the report.

Methuen

The proposed interceptor for the North Bank of the Merrimac River have had preliminary plans drawn up. A bike trail on this segment could connect with a bike path on the Haverhill easements at Rt.110. The North Bank Project has a possibility for use as recreational trail.

DEQE Response

The North Bank Project has a high potential for multiple-use. On page 36a the Merrimack Interceptor (#22) should be placed in the "high" category for multiple-use potential.

BEVERLY

In Beverly there are areas of septic system failure, contrary to the first paragraph on Page 41. In fact, the City has applied for lateral sewer funding through the State's program for the Hart St. area. These sewers will be within the road right-of-way. Is it possible that the project in the multiple use report will be funded?

DEQE Response

Corrections in the first paragraph on the Hart St. sewer are noted. It is hoped that potential recreation open space projects identified in this report will be funded from a variety of sources. These sources include private investment, local, state and federal programs for developed recreation, transportation, lake improvement, waste water construction projects, urban redevelopment and historic preservation. However, there is no separate funding per se for these projects other than in Step I, Facilities Planning, of the Construction Grants Program.

ESSEX

The Town is interested in open space/recreation protection and improvement; however, the plans for sewerage treatment and conveyance in Essex have been scuttled. Any new facilities may consist of neighborhood treatment plants which may or may not be suitable for recreational use.

DEQE Response

The entire section on Essex, pp. 45, 46 and 47 up to "Gloucester", should be deleted. In its place, insert the statement: "Essex does not currently have a central wastewater treatment system, but depends on individual, subsurface disposal systems. If a new Facilities Planning effort is undertaken, an analysis of recreation/open space opportunities will be required.

GLOUCESTER

P. 47 - 1st paragraph should read, "Sewage is discharged into Gloucester's outer Harbor (not Weston Bay as written)".

Comment: A primary waiver is being attempted which,if approved,will allow dischar to be extended from the outer Harbor to Massachusetts Bay.

P. 48 - 4th paragraph. It is impossible to extend a pier over outfall as it will extend through Gloucester Harbor.

C. Open Space and Recreation
#1 should read Stage Fort. Change writeup to the City of Gloucester.

DEQE Response

Make corrections as noted. The recommendation concerning the outfall use as a pier was not intended to be a structure extending the full length of the outfall. To page 48, paragraph 4 add the following statement:

"If construction of an outfall extention is approved, construction barges and other equipment could serve a dual purpose in constructing a short pier or fishing and boating platform from the shore and over the first one hundred feet of the outfall easement."

ROCKPORT

On page 68, the Sandy Bay has not provided shell fishing. There are also existing picnic areas along the shoreline. On page 70, under #1, the Town Department of Public Works should be cited (not the Town Engineer and Park Department). Under #2, cleanup recommendations should also be made for Mill Brook.

DEQE Response

Although Sandy Bay may not have provided shellfishing in the recent past, the Division indicated it is closed to shellfishing now and in the near future because of bacterial contamination. Add other corrections as noted above.

SWAMPSCOTT

On page 74 under "Pump Stations" note that there currently is access to Foster Pond via the property at the existing pump station. The recommendation for the use of the new pumping station should be removed, since a privately owned lot would block the access to the Pond.

DEQE Response

Strike the section on P. 74 under "Pump Stations" and replace with "there are two pump stations, one of which provides recreational access to Foster Pond. The other existing station and a proposed pumping station have little or no recreation potential." Strike the sentence at the top of page 76 and replace with, "The sewer commission should consider expanding the use of the existing pumping station on Foster Pond."

Comments of the Metropolitan Area Planning Council

The MAPC had several general comments on the Recreation Open Space reports. More emphasis should be placed on the nuts and bolts of implementation of the potential multiple use projects described. In addition, cost estimates for the recreation portion of multiple use projects are not readily available. This information is important for Recreation Departments, Conservation Commissions and other community agencies which might sponsor recreation projects associated with water clean-up.

DEQE Response:

The DEQE Office of Planning and Program Management has published the Wastewater Facility Planning Guidelines: Recreation and Open Space Opportunities, August 1980 Copies of this report are available in this office for interested individuals. These guidelines can be used for general cost estimates in planning facilities; however,multiple-use costs are site dependent, and each project will require a separate analysis.

Comments of the Charles River Watershed Association

The following comments were made by the Charles River Watershed Association concerning the content and recommendations of the Recreation Report, Volume 9B. Where appropriate the DEQE response is given following each comment.

General Comments

Comment: Some of the information, particularly on polluted water bodies is out of date and misleading because it was based on the Draft 208 Area-wide Water Quality Management Plan.

DEQE Response: The 208 Plan was the most comprehensive water quality report available so it was used widely for this report. The responses below listed under the page by page comments of the CRWA should be added to the report as corrections where indicated. Hopefully, this will serve to update information obtained from the Water Quality Plan.

Comment: In many cases polluted water bodies carry the recommendation that the local community should work with the DWPC and other agencies to clean up the subject waterbody. This recommendation is really a "given" for most water quality concerns. Does it really need to be stated every time?

DEQE Response: Although the clean-up of water bodies may seem to be a "given" need for all polluted areas, where many community needs compete for limited public funds, it was felt that clean-up needs should be reiterated. State-wide, some communities were in favor of the support and emphasis of their water quality clean-up efforts.

Page 59
Under "Charles River" all of the Charles River is designated Class B except for the Basin, which is designated Class C. Under "Muddy River et al" the "Emerald Necklace"was intended as a greenbelt - the word "space" is extraneous.

The Fens should be referred to as the Fens Pond not the"Fens Park area" as stated.

DEQE Response: The above corrections should be made where indicated.

Page 60.
Cemeteries is misspelled.

DEQE Response: Note correct spelling above.

Page 63.
The Western Avenue and Soldiers Field Road Storage Area proposed site has been moved away from the Charles River bank areas. Under #3 in "Evaluation and Recommendations". Also the word category is misspelled.

DEQE Response: Under number 3, "Evaluation and Recommendations" add the following statement between ..."open space lands." and "Innovative multiple use...":

> These conflicts with recreational uses need to be resolved. For example, the proposed Western Avenue and Soldiers Field Road Storage Facility Site has been moved from the river bank area by the MDC because it is incompatible with recreational use. If conflicts cannot be resolved...

Please note correct spelling of category.

Page 73.
In the Cambridge Introduction, reference should be made to the Cottage Farm detention and disinfection facility which "treats" overflows.

Under "B" Polluted Water Bodies, Charles River", again the designation of the Charles Basin is C, for fish and wildlife propogation. The goal for the remainder of the Charles is B or fishable/swimmable. In the second paragraph under Charles River, the Charles River Basin is so called from the Watertown Dam to the new Charles River Dam. The Museum of Science Dam should be referred to as the old dam which "created more problems than it was intended to solve." The Charles River Basin is stratified in temperature much as a lake is stratified. The new dam with pumping facilities will help to control new saltwater intrusions.

DEQE Response: The above corrections should be made to the report in the indicated locations.

Page 76.
Some of the discharges or pollution sources under "Charles River" are downstream of Dedham. Highways also contribute to oil spills as a pollution source.

DEQE Response: In the first paragraph under "Charles River" DELETE all of the following words and phrases:

> "... and locally severe water quality degradation in the vicinity of several old landfill (dump) sites, notably in Newton and Waltham."

"An important source of algal nutrients appears to be the upstream point sources."
"... sewer overflows/by passes in the Waltham and middle watershed; .... Wellesley ... and Weston lying in the Morses Pond watershed ..."

After the phrase ..."industrial sites..." in the last sentence add: "... and highways ..."

Page 87.
The Natick-Framingham replacement sewer project by the MDC will provide great recreation potential in the area indicated under interceptors for Natick.

DEQE Response: At the end of the second paragraph on the top of page 87, add the following sentence:

> The planned replacement of the Natick-Framingham sewer will provide an excellent opportunity for multiple use as a recreational trail. Construction will offer an opportunity to provide a cost savings via 201 start up costs and site restoration which would be required for the sewer project in any case. Any additional costs required for a recreational trail facility will have to be found from another source.

Page 88.
Under "B. Polluted Water Bodies, Charles River," again some of the pollution discharges stated are actually downstream of Natick. Highways should be noted as a source of oil spills. In the third paragraph, the replacement of the Natick-Framingham sewer above the South Natick Dam will greatly improve the water quality of the Charles, possibly to the swimmable level.

DEQE Response: In the second paragraph under "Charles River" DELETE the following words and phrases:

> "...in Waltham and the Middle Watershed ..." "...Wellesley... ."
> "... and Weston lying in the Morses Pond Watershed ..."

After the phrase "industrial sites" add the phrase "and highways".
In the third paragraph under "Charles River" add the following statement after the phrase "If clean-up activities were initiated ...":

> such as the replacement of the Natick-Framingham sewer above the South Natick Dam...,

Page 91.
Under "A. Wastewater Treatment Facilities, Metropolitan District Commission" it should be pointed out that "Banking and landscaping" in wetlands are to be avoided wherever possible. Also, there is some existing access for boaters on the Charles in Needham, and the MDC will be providing another in the near future.

DEQE Response: The second paragraph under "Wastewater Treatment Facilities" is admittedly misleading if read out of context. Therefore, we recommend adding the following statement after the phrase "proper banking and landscaping..:"

> Filling and banking in wetland areas should be avoided in most cases because it disturbs the flow of water and can inhibit the filtration action normally accomplished by wetlands in nature. However, where future relief sewer construction will require permanent fill material, passive recreational uses should be considered for these locations to provide public access to wetland open space. The most appropriate uses would be hiking and nature study.

In the same paragraph, change the sentence which addresses public boating access to read:

> It may be feasible to develop increased access to the Charles River for small boats and canoes, such as the proposed MDC canoe launch site at the Cochoran Dam.

Page 92.
Under "C. Evaluation and Recommendations" the Charles River at this location is probably too narrow for successful "sailing".

DEQE Response: DELETE the word "sailing" as noted.

Page 93.
The "multiple-use" of the Webster Conservation Park may be misleading since its acquisition occurred many years after the sewer pipe was laid. As well, the area is far more extensive than the sewer easements.

DEQE Response: It is acknowledged that recreation and the sewer easement aquisition occurred years apart in this case. However, the intent of this project is to help foster recreational opportunities through water pollution control projects by any means available. From past observations, the taking or purchasing of a sewer easement or right of way may gain a "foothold" for the town in a potential open space area. A recreational easement and or additional parcels of land can be added later to the public ownership. Obtaining the sewer line easement may simply serve to identify and highlight a promising conservation property for later aquisition. In a sense this is still multiple use of an area for two purposes, open space and wastewater conveyance.

Page 94.
Under "Charles River" the MDC owns considerable property along the Charles shoreline in Newton.

DEQE Response: In the "Charles River Section" change the last sentence to read:

> Lower Falls Park as well as City open space and other MDC provide access and recreation along much of the Charles River shoreline.

Page 103.
Under Walker Pond, the Massachusetts Bay Community College has moved elsewhere.

DEQE Response: Add the word former before the phrase ...."campus of the Massachusetts Bay Community College,..." under "Walker Pond".

Page 104
Recommendations in Waltham should include a statement of need for an updated Open Space Recreation Plan which is adopted by the City. This is particularly true in view of the urbanization pressures mentioned on the previous page. Under "D. Open Space and Recreation Data" #1 should read Stoney Batter Playground.

DEQE Response: On page 104 add a #6 under "Evaluation and Recommendations" (heading on the previous page):

6. The City should adopt an updated Open Space and Recreation Plan in view of the increasing pressures toward urbanization.

Make above correction on D.1.

Page 107.
The MDC owns substantial land along the Charles in Watertown.

DEQE Response: Under "C . Evaluation and Recommendations #2", after the phrase "the Parks and Recreation Department ..." add and the MDC.

The following comments were made by agencies and individuals in the cities and towns concerning the Metropolitan Area Part B Report. Where required, DEQE's response to comments is included.

ARLINGTON

The Recreation Facilities Committee pointed out that the Arlington Reservoir, as part of the Mill Brook system, has the greatest potential for recreational development in the Town. Through a Community Development Block Grant and Heritage Conservation on Recreation Service funding, the Town will build an artificial basin within the lake, where water filtration and chlorination will provide water of a high enough quality for swimming.

DEQE Response: We would like to add to the Arlington write up on page 45 that the filtration/swimming area described above for Arlington Reservoir is a good example of innovative recreational use of a polluted water body.

BELMONT

The Belmont Engineering Department has suggested the following changes be made on Page 50:

Under "A" "Pump Stations" change Woodburn Rd. to Woodbine Road. "Winter Street Outlet" change Concord Street to Concord Avenue There are several problems associated with a possible bike or hike trail along this easement. These problems include: portions are in wetlands and floodplains; there are many private ownerships; a railroad crossing is involved; the High School security fence would have to have an access; and the McLean Hospital property is now an apartment building in private ownership. This

would not be a potential side for a hiking/biking trail despite the open spaces which would be connected.

DEQE Response: On Page 50 of the report, the difficulty of trail development along the Winter Street outlet is acknowledged. We recommend that the recommendations on Page 50 be replaced by the observations made above.

BOSTON

The Boston Conservation Commission commented that the implementation dates for most potential multiple use projects seem excessively far into the future. On Pages 56-58. The concept of multiple use and increased public access to waters is particularly important for Boston. Possible property in Dorchester near the Pine Neck Creek storm drain extension and improvement to drainage near the Old Landfill are of particular interest. In response to a possible multiple use project at Fort Point Channel, the Boston Water and Sewer Commission outlined problems with a Fort Point Channel project in a letter to EPA. The east side interceptor replacement - North branch (also a wet weather conduit listed in the recreation report at the top of Page 58) could not include a pedestrian walkway in conjunction with construction without a project sponsor and design/construction funds for the recreation portion of the project. Although the Sewer Commission will cooperate with other plans for public access at Fort Point Channel, significant construction cost savings could not be realized until a sponsor for a recreation project is found.

DEQE Response: Concerning the dates of implementation for CSO projects and other sewer system improvements in Boston, design and construction described in each of the four Boston Harbor Facilities Plans is at once complex and expensive. Both the MDC and the Boston Water and Sewer Commission have scheduled projects in order of priority according to need and the amount of pollution abatement which will result from each project. It is hoped that the public conservation and recreation agencies in Boston will review the designs of the Sewer Commission and the MDC for the various projects and urge the incorporation of multiple uses. We also suggest that the Fort Point Channel Project be carried out in such a way as to incorporate public access easements, in addition to sewer easements, along the west shore of Fort Point Channel. Provisions for public access to the water will increase the acceptability of the project by the public, even if physical construction of small boat and pedestrian ramps or walkways cannot be carried out immediately.

CAMBRIDGE

The Conservation Commission commented that the Charles River Greenway in the Memorial Drive area is not under the control of the Parks Department (p.74) but the MDC. Certain traffic improvements such as metal barriers along Memorial Drive inhibit the aesthetic value of the area as a riverfront park, in the opinion of the Conservation Commission.

DEQE Response: On Page 74, Section C, #2 the existing statement should be removed and replaced with the following:

2. The MDC should extend the river greenway as well as review any conflicting uses of the Charles River shoreline in Cambridge.

We feel that conflicting uses and activities are problems faced in many river-front park areas, since they are frequently the historical center of activity in the community. However, the most profound increase in the value of the Charles River parks will be through water quality improvements, such as the abatement of wet weather sewer overflows.

LEXINGTON

In May 1981, the EPA newsletter Environment News reported on the status of the Minuteman Commuter Bikeway described in the second paragraph, Page 78, in connection with the Millbrook Valley Relief Sewer. The Metropolitan Area Planning Council is still awaiting a decision by the U.S. District Court on B & M Railroad's request to completely abandon freight service on the Lexington branch. If this decision is made, the bikeway is a definite possibility and coordination of the Millbrook Valley Relief Sewer project and the bikeway construction could provide some cost savings.

NEEDHAM

The Town Engineer pointed out corrections on Page 92, under Rosemary Lake, third line "$250 million" should be changed to $250,000 and "chlorinated asphalt pool" should be changed to a steel coffer dam, with an asphalt bottom, which provides a pool area. The Walker Gordon Pond in the next section and under recommendations is primarily privately owned. Clean up will require the cooperation of the private owners.

The Needham Park and Recreation Commission also made several comments. Concerning Page 91 of the Recreation Report, one of Needham's open space goals is to acquire open space which would connect existing public lands, particularly along the MDC's aqueduct. On Page 92, it is not necessarily the goal to make all of Rosemary Lake swimmable, but rather to reverse the process of eutrophication with general recreational and biological benefits. Under Walker Gordon Pond on Page 92, note that the Park and Recreation Commission has instituted a lake management program at the site, involving plantings, litter clean up and public education.

DEQE Response: We recommend including all of the above comments in the report at the indicated locations. In addition, it is presumed that the Town's goals in regard to open space trail acquisition would also apply to the MDC interceptor.

NEWTON

In Newton comments were received from the Mayor, the Department of Planning and Development and the Conservation Commission. On Pages 93 and 94 "Town" should be changed to City. On Page 94, C2 "The Selectmen" should be changed to the Board of Aldermen. Recent acquisitions (of open space land) include the Novitiate Land on the Charles River (south); the Oak Hill area; the

Cold Springs City Center; and Chestnut Hill Country Club, east City center. Within fiscal restraints the City is making every effort to preserve open space/recreation lands along the Charles River, however resources for acquisition are becoming scarcer. On Page 94 under Sawmill Brook, sources of pollution upstream of Newton may include leaking or surcharging sewer lines.

DEQE Response: The editorial corrections should be made as indicated above. We realize the increasing difficulty of obtaining monies for land acquisition. This makes dual use of existing public easements for sewer systems particularly important. Non-point sources of pollution in Sawmill Brook have not been specifically identified.

REVERE

The Department of Planning and Community Development has examined the Revere Beach Boulevard for recreation potential and found that no potential exists for multiple use. The interceptor is on the West of Ocean Avenue (rather than East), and underneath an MBTA parking lot.

DEQE Response: On Page 97 under "Interceptors" and under "B", strike all of existing writeup and insert the following:

> Interceptors
> The Revere Beach Boulevard Interceptor, on the West of Ocean Avenue has no recreation potential due to its location under a parking lot. There is no known multiple use potential in Revere.

On Page 39, strike #39 - Revere Beach Boulevard.

WELLESLEY

Both the Conservation Commission and the Town Engineer provided comments. The Town's major interceptor is located on park and parkway lands adjacent to Fuller Brook. The entire length provides a walk and bikeway which is a heavily used existing passive recreation area. On Page 107 under Lake Waban, the Town does not own shoreline parcels on North Lake Waban. This property is owned by Wellesley College. Morses Pond is now under an active lake management and water quality maintenance program and provides approximately 68,000 user days annually for boating, swimming, and fishing. The Town is interested in obtaining financial assistance for their continuing lakes management program. The Town is also in the process of revising its recreation and open space plan.

DEQE Response: The following changes should be made in the report:

Page 107 "A" - Strike entire section and substitute the following:

> "Pump stations do not have recreation potential, however, the Wellesley Interceptor presents a good example of an existing multiple use. The interceptor is parallel to Fuller Brook and

provides hiking, biking and passive recreation for many users.

On Page 108 under "Lake Waban" strike the last sentence in the first paragraph, and substitute:

> "Wellesley College owns the north shore property of Lake Waban." In the last line of the "Lake Waban" section, strike the word "northern". Under "Morses Pond" strike the last sentence of the first paragraph and insert: "Dredging is complete and the Town is maintaining an active lake management program including quality testing, weed harvesting and chemical treatments." In the same section, strike the last paragraph and insert: "Morses Pond now provides a variety of recreational activities. Continued lake management will provide high quality water and a dependable recreational resource."

WESTON

The Planning Board commented that the center of Weston has not, to their knowledge, been specifically and clearly identified as the source of pollution in Stony Brook. Although there have been septic system problems in Weston Center, they have not been clearly tied to any pollution problems in Stony Brook.

DEQE Response: The paragraph at the bottom of Page 109 is somewhat strongly worded in light of the above comment. Strike this paragraph and substitute:

> "Stony Brook is receiving periodic surface and groundwater contamination from unidentified non-point sources. Since Stony Brook drains into a water supply, the Weston Board of Health should continue efforts to identify and abate sources of pollution."

WINTHROP

The Winthrop Water Works Department commented that multiple use development is not in the financial interests of the Department.

DEQE Response: No specific recommendations were made for facilities within Winthrop proper. The recommendations for Deer Island were included in the Winthrop section only because of the Island's proximity to the Town. MDC has the jurisdiction over any multiple use development on Deer Island; however, officials in Winthrop should be included in planning for the Island.

Comments of the Metropolitan Area Planning Council.

The MAPC had several general comments on the Recreation Open Space Report: More emphasis should be placed on the nuts and bolts of implementation of the potential multiple use projects described. In addition, cost estimates for the recreation portion of multiple use projects are not readily available. This information is important for Recreation Departments, Conservation Commissions and other community agencies which might sponsor recreation projects associated with water clean-up.

DEQE Response: The DEQE Office of Planning and Program Management has published the Wastewater Facility Planning Guidelines: Recreation and Open Space Opportunities, August 1980. Copies of this report are available in this office for interested individuals. These guidelines can be used for general cost estimates in planning facilities; however, multiple use costs are very site dependent, and each project will require a separate analysis.

Comments of the Charles River Watershed Association.

The following comments were made by the Charles River Watershed Association concerning the content and recommendations of the Recreation Report, Volume 9C. Where appropriate, the DEQE Response is given following each comment.

General Comments

Some of the information, particularly on polluted waterbodies is out of date or misleading, because it was based on the Draft 208 Area-wide Water Quality Management Plan.

DEQE Response: The 208 Plan was the most comprehensive water quality report available so it was used widely for this report. The responses listed below under the page by page comments of the CRWA should be added to the report as corrections where indicated. Hopefully, this will serve to update information obtained from the Water Quality Plan.

Comment:
In many cases polluted waterbodies carry the recommendation that the local community should work with the DWPC and other agencies to clean up the subject waterbody. This recommendation is really a "given" for most water quality concerns. Does it really need to be stated every time?

DEQE Response: Although the clean-up of waterbodies may seem to be a "given" need for all polluted areas, where many community needs compete for limited public funds, it was felt that clean-up needs should be reiterated. Statewide, some communities were in favor of the support and emphasis of their water quality clean-up efforts.

Page 39.
On Table 5 under Milford #26, Echo Lake should be removed since it is a Class A water supply and would not be appropriate for recreation. Under Norfolk #28, the shores of Populatic Pond are shared by three towns and

septic systems contribute to the pollution of the Pond. Also the existing ownership is mostly private.

DEQE Response: DELETE #26 on Page 39 as recommended. Insert on Page 57 #B of the Franklin section and Page 73 #B of the Medway section the following:

> Populatic Pond has had water quality problems caused by failing septic systems. The Pond would have recreation potential if clean-up measures were implemented.

On Page 38 - insert Populatic Pond and Franklin, and on Page 39 - insert Populatic Pond and Medway, both under "medium" potential.

Page 47.
Bellingham has recently filed for funding to conduct a Facilities Plan.

DEQE Response: Under the introduction for Bellingham, add the following sentences:

> Bellingham has applied for funds to conduct a 201 Facilities Plan for wastewater treatment. Alternative wastewater management measures will require an analysis of multiple use feasibility.

Page 57.
In Franklin, the old treatment plant contributed to pollution in Mine Brook. The Charles River Water Pollution Control facility is now in operation in Medway. The write-up is inconsistent since under A the CRWPC facility is said to have "no" recreation potential but under B. Evaluation and Recommendations it is said to have excellent potential.

DEQE Response: Under A, replace the words "existing plant" and existing wastewater treatment plant" with the words old wastewater treatment plant. Replace the words "presently under construction" with "recently completed in Medway". Replace the statement in parenthesis with: However, new trunk sewer easements do have potential. Under "Evaluation and Recommendations", DELETE the existing paragraph and insert:

> There are no recreational opportunities at the new Charles River Pollution Control Facilities in Medway. However, trunk sewer line easements leading into the plant could provide recreational potential and river access for both Franklin and Medway.

Page 72.
In Medfield, the U.S. Army Corps of Engineers has not purchased the "entire" area bordering the Charles. Medfield already has a very strong conservation education program.

DEQE Response: Under "C. Evaluation and Recommendations" change the first sentence to read:

Significant river frontage on the Charles has been purchased by the U.S. Army Corps of Engineers.....

Under #2 change the statement to the following:

The educational program should be continued to help keep residents informed about proper land use management.

Page 73.
The trunk sewers leading to the plant in Medway have significant recreation potential. The water quality of the Charles has continued to improve and recreation on the River is increasing. The publicly owned Natural Flood Storage project along the Charles should be mentioned.

DEQE Response: Under Interceptors add the following:

The main trunk sewers leading into the treatment plant do, however, present good multiple use potential. A trail or passive recreation area below the Medway Dam would be possible.

Under "B. Polluted Water Bodies", change the second sentence to read:

Previous water quality problems have limited recreational use of the Charles, but water quality continues to improve.

Under "C. Evaluation and Recommendations" Change the second sentence to read:

The only federally owned recreational area along the Charles in Medway is the U.S. Army Corps of Engineers Natural Flood Storage Area which will provide considerable passive recreation.

Page 75.
Under "Treatment Plant" the facility in Hopedale is now being designed and construction could begin as early as 1982.

DEQE Response: Add the above comment to the writeup as indicated.

Page 76.
In the Charles Street pump station area, drainage, filling and grading of wetlands should be avoided. Echo Lake is a Class A water supply and could not be appropriate for recreation. Cedar Swamp Pond is also called Milford Pond. A dam was used to create the Pond.

DEQE Response: At the top of Page 76, DELETE the first full sentence and replace with the following:

Although the area could be used as a nature trail, drainage or filling required for this use should be avoided.

Under "Charles River" DELETE the entire section and insert:

> Echo Lake is a water supply and as such would not be appropriate for recreational use.

Under "Cedar Swamp Pond" insert:

> This waterbody is also called Milford Pond.

DELETE the last sentence of this section. On Page 78, DELETE "D. 1. Echo Lake".

Page 79.
Mention should be made of the Natural Flood Storage Area. The existing treatment plant is actually a secondary plant which discharges to Sugar Brook. Is the connection of Millis to the Charles River a certainty? Finally, the Charles River is now reaching its B classification standard.

DEQE Response: Add to the introductory paragraph the following:

> A great deal of passive recreation can be provided by the Natural Flood Storage Project which is to be managed by the Division of Fisheries and Wildlife.

In the first paragraph under "Treatment Plant", change the word "primary" to secondary and add the phrase via Sugar Brook.

Our communication with the Millis DPW indicates that funds have been apportioned for the interceptor to the Medway/Franklin Facility. However, final approval has yet to be given.

Under "B. Polluted Water Bodies", change the next to last sentence to read:

> If the Charles continues to maintain a B classification or better, boating and fishing opportunities will continue to develop.

Page 81.
The MCI mentioned under "Polluted Water Bodies" discharges to the Charles via the Stop River. Improvements to or elimination of failing septic systems would contribute to improved water quality in Populatic Pond.

DEQE Response: Make the additions recommended above.

Page 83.
In Sherborn, upstream sources of pollution are not that evident. The Charles is probably meeting Class B standards.

DEQE Response: Make the change suggested above in the second paragraph under Sherborn.

Town By Town Comments

BEDFORD

Page 45.
Norma Road Pump Station does not abut conservation land and is situated in a natural wetland/recharge area which should be preserved for these purposes. Adequate recreational facilities exist within 0.4 miles at the Davis School so that pressure for additional facilities in the area does not exist.

Page Road Pump Station is not a sewer pumping station, but an active well contributing to Bedford's water supply. Except for the Page School facilities, the area is exceptionally wet and must not be developed due to the proximity of the well. The Town has already established a rather extensive conservation and recreation area in the vicinity.

The Bedford Conservation Commission suggests that a more cost effective bike/hiking/jogging trail along the existing B&M right-of-way from Lexington to Concord and also to Billerica has received only modest expressions of interest for publicly funded improvements; therefore, the proposal made for a trail from Burlington Rd. (p 45) is not feasible.

The Concord River shoreline is completely controlled by the Department of the Interior.

DEQE Response: Sections under A p.45 "Pump stations and Interceptors" should be removed and replaced with the above observations.

DEQE inadvertently omitted the fact that the U.S. Department of the Interior owns and manages the Great Meadows National Wildlife Refuge and controls all of Bedford's shorline on the River.

It has been brought to our (DEQE's) attention that boating, fishing, picnicking, and nature trails already exist along the Concord River in the area suggested in the proposal. These facts should be noted in the Bedford section.

MARLBOROUGH
The City has acquired 65 acres of land on Concord Rd. abutting 75 acres of state forest which has been turned over to the City. This in turn abuts 15 acres of city forest which has been turned over to the Recreation Department.

On Page 65, #5 under Section C, a trail system will be incorporated into the Concord Rd. project. Also note Williams Lake is public but cannot be used for recreation.

DEQE Response: Change #1 under Section D to City owned. Change #2 under Section D to City rather than town. Williams Lake area is owned by the City, maintained by the DPW and cannot be used for recreation purposes.

MEDFIELD

On Page 70, Mill Pond is not near the treatment plant, nor is it near the brook that originates from what was formerly Ice House Pond.

The Corps of Engineers has taken an easement on 71.39 acres of land owned by the Conservation Commission which is adjacent to the treatment plant. Hunting is allowed on this acreage.

Medfield has no existing pump stations for wastewater.

The Medfield treatment plant does not discharge to Sugar Brook. It produces a very high quality effluent.

It is suggested in the report that well sites should be investigated for possible recreational use. Because of vandalism and damages to the water supply, 8 foot fences around the pump houses have been built to close the area.

The Rhododendron Reservation is a fragile wetland area.

DEQE Response: We suggest the following changes be made to the report:

The treatment plant is located north of West and Bridge Streets.

Note the current recreational use near the treatment plant as described above.

Strike the section on "pump stations" on Page 70.

Strike the second sentence under "polluted Water Bodies" on Page 70. Add: The Medfield State Hospital and the newly constructed Medfield STP effluents flow into the Charles. The Charles River, from Populatic Pond to the Stop River is not severely polluted. The Medfield treatment plant discharges a very high quality effluent.

Under "C" on Page 72, strike #3.

On Page 72 the Rhododendron Reservation is <u>not</u> suitable for recreational activities as it is in a swampy area.

MEDWAY

The following comments were offered by the Supt. of Parks with support of the Parks Commissioner. The Town's only outdoor swimming facility is located at the West Medway Park Pond. The water quality is augmented by a series of four compressors feeding aeration tubes in the Pond itself and in Sanderson Pond located a short distance upstream. The effectiveness of this system is somewhat questionable in addition to the high cost of power needed for its operation.

A more natural alternative would be to reconstruct a dam at Sanderson Pond. This dam, if properly designed, could provide natural aeration as well as raising the water level providing additional fishing, boating and skating potential. It may also be possible to install a small hydro generating unit in the new dam.

Since the Park Pond was last cleaned and dredged in 1973, redredging may soon be necessary also.

DEQE Response: Although West Medway and Sanderson Pond were not listed on the state's polluted water bodies list, the above comments on their status should be added to the report. They appear to be the primary water based recreational resources in Town.

Comments of the Metropolitan Area Planning Council.

The MAPC had several general comments on the Recreation/Open Space Report: More emphasis should be placed on the nuts and bolts of implementation of the potential multiple use projects described. In addition, cost estimates for the recreation portion of multiple use projects are not readily available. This information is important for Recreation Departments, Conservation Commissio and other community agencies which might sponsor recreation projects associated with water clean-up.

DEQE Response: The DEQE OFfice of Planning and Program Management has published the Wastewater Facility Planning Guidelines: Recreation and Open Space Opportunities, August 1980. Copies of this report are available in this office for interested individuals. These guidelines can be used for general cost estimates in planning facilities; however, multiple use costs are very site dependent, and each project will require a separate analysis.

The following comments were made by the towns and cities concerning the Metropolitan Area, Part D, Recreation Report.

Braintree

Page 44: A. Wastewater Treatment Facilities

"Weymouth-Braintree Commission" should read Weymouth-Braintree Regional Recreation Conservation District.

"Weymouth Fall River" should read Wymouth Fore River

B. Polluted Water Bodies

Route 53 Dam should probably read the Quincy Avenue Bridge

Page 46: D. Open Space and Recreation Data

#7 - The Old Quincy Reservoir is owned by the City of Quincy
#8 - Hayward Creek is owned by the Town of Braintree

DEQE response - Please make changes as indicated above in the appropriate locations.

Canton

The terms Class A and Class B water quality are unclear. In addition, the Planning Board wished to know what criteria were used in rating the recreation potential of wastewater treatment facilities.

DEQE Response: A full copy of the report was sent to each Board of Selectmen's or Mayor's Office. The introductory material on Page 35 outlines the evaluatic process for treatment facilities. Class designations for water bodies are given for current status and future uses. They are as follows:

Class A - Drinking water supply or potential supply;
Class B - Fishable swimmable - capable of supporting primary water contact recreation;
Class B - For fish and wildlife propogation;
Class U - Unclassified or having a water quality which is too poor to support any of the above uses.

Hanover

The Board of Selectmen in the Town of Hanover was concerned with an apparent conflict of information between information on French's Stream from the Division of Water Pollution Control and the Recreation Report on Page 55.

DEQE Response: After a review, no conflict was discerned. It was found that in January 1981 odors were caused by a partial covering of ice on the River. The odors referred to in the report were associated with late summer low flow conditions, and cover the segment of the North River to the French's Stream confluence with the Drinkwater River. The Rockland Treatment Plant is now being enlarged and upgraded. This activity will contribute to the water quality and recreation potential of French's Stream.

Marshfield

Page 66: A. Last Sentence Under Treatment Plant - The site for multiple use recreation is needed as a disposal site for dredged material. This area will provide a 50-year disposal site so that Green Harbor can be dredged for recreational boating.

Page 67: B. The North River is not mentioned in Marshfield, only Norwell.

C. #4 - The first sentence should be changed from "or increased maintenance" to and increased maintenance of septic systems.

DEQE Response:

The use of the area around the treatment plant for the disposal of Green Harbor sediments contributes to the utility of the area for boating. However, we still feel that finished sections could be considered for other recreational uses.

Although the North River is not a polluted water body but a scenic River, it should be mentioned in the Marshfield section as an example of shoreline protection and watershed conservation measures which have preserved a high quality recreational resource.

Under C. #4, both sewer connections and septic system maintenance should be carried out in a timely manner.

Westwood

The Sewer Commission has commented on the difference between a right of way, an in fee ownership, and an easement which is more like the rental of a property for a special use. Without additional rights of access, Westwood's

sewer easements cannot be used for recreation. Trails on conservation land have been blocked off with boulders to prevent motorized access and discourage problems such as vandalism, trash and illegal drinking. These problems would be major barriers to trail development along sewer easements.

DEQE Response: Some of the above mentioned problems associated with multiple use are discussed in the full report on pages 13 through 16, 19 and Appendix B. Page 97 also explains the situation in Westwood concerning sewer easements.

Weymouth

The Park Commissioners in Weymouth had several comments on the Recreation Report. There are several other publicly owned parcels of property on the shoreline of Whitman Pond. Although cleanup of the Whitman's Pond and the Fore and Back Rivers is certainly a worthy undertaking, few local financial resources are available for these activities.

DEQE Response: On Page 100 under B. Whitman's Pond - eliminate the phrase "Although there is only one publicly owned parcel....". and replace this phrase with: "There are several publicly owned parcels of land along the shoreline of Whitman's Pond, including Memorial Drive Playground, and.....".

Also, under "D. Open Space and Recreation Data", change #12 to Middle Street Shoreline owned by Park Commission.

Add, under D. the following.

15. Lake St. Beach - Park Commission (located along north central shore of Whitman's Pond).
16. Morningside Path Park - Park Commission (located at Lambert Avenue along Whitman's Pond shoreline).

On Page 100 under C. add the following comment:

Due to financial constraints on recreation and open space acquisition, use of existing sewer and pump station easements and other alternative means must be sought for open space and shoreline preservation and protection. Open space acquisition is one of the best nonstructural means of maintaining and improving water quality. In addition to multiple use of wastewater facilities, funding sources, public and private, are outlined on Pages 20-33 of the Recreation Report. The specific agency listed should be contacted to update information on the availability of funds or changes in certain requirements.

Comments of the Old Colony Regional Planning Commission.

Page 40 and 67: Abington and Whitman are the only communities who are now members of the Old Colony Water Pollution Control District (OCWPCD). Each of these towns is now negotiating separately with Brockton for wastewater treatment. The status of OCWPD is unclear at this time.

Page 58: A grant award has been made and work begun on the Kingston Facilities Plan.

DEQE RESPONSE: In light of the above comments we recommend inserting the following on pages 40 and 67 (Abington and Kingston respectively):

> Although the status of the Old Colony Water Pollution Control District is uncertain at this time, any plans for wastewater treatment facilities will require an analysis of multiple-use potential, regardless of where or by whom wastewater is treated.

On page 58 we recommend making the change suggested above for the introductory paragraph of the Kingston section.

The following comments were made by various individuals and agencies in the cities and towns concerning the Old Colony Recreation Report. Where required, DEQE's response to comments is included.

East Bridgewater

The Conservation Commission in response to DEQE's report, recommended including Robbins Pond, Forge Pond and the Matfield River in the report.

DEQE RESPONSE: Robbins Pond was included on the revised list of polluted water bodies in Massachusetts which was published in March 1980. It was inadvertently ommitted from the Recreation Report. Please add the following Section, after the Satucket River section on page 51:

> Robbins Pond - This pond, located in the south east section of East Bridgewater is 124 acres in size and extremely shallow. The Satucket River flows out from the north end of the pond. The pond, like many in the area has high color and a high iron content. Dense aquatic weed growth occurs along the shoreline and around Osceola Island. Surrounding the pond is a large amount of residential development which is served by septic systems. Public access is informal but the pond is in

high demand for swimming, fishing and boating of all types. This pond is still oligotrophic. If maintained, the potential for a high quality recreation area at Robbins Pond is excellent.

Forge Pond is not included on the list of polluted water bodies in Massachusetts. This artificial pond is surrounded by highway and residential uses and is located in the downtown area. Severe sedimentation problems have plagued the pond over the years. This pond has extremely limited recreation potential and was included in the study for this reason.

The Matfield River should also be added to the recreation study and the following added to the report on page 51:

> The Matfield River displays contamination from fecal coliform bacteria throughout most of its length in East Bridgewater. It is presently U or unclassified because of STP discharge and sources of pollution in East Bridgewater. If water quality were improved on the Matfield River, it could have some potential recreational uses for fish and wildlife propagation.

Hanson

On page 58 under C "Open Space and Recreation Data" #3 should read: Open Space Land, Industrial Land, and Water Department Wells.

DEQE RESPONSE: The above correction should be added as stated.

Plymouth

Several comments were received by citizens of Plymouth regarding future recreational uses of Plymouth Harbor. Specifically, these comments show public support for upgrading the current water quality level of the Harbor to SA for water contact recreation and shell fishing because of the potential value of this area as a multi-purpose resource.

DEQE RESPONSE: The Town is now in Step II, or the design phase of a Wastewater Facilities Plan to improve various aspects of the sewer system, including the existing secondary plant which discharges to Plymouth Harbor. Since the STP outfall and various sewer overflows are major water quality problems in the harbor, corrections which are now in the design phase will substantially contribute to the abatement of bacterial problems in the harbor. One of the most important aspects of this program is the constant feedback and support from environmental organizations and the public

at large during the facilities planning process. It is important for the interested public to establish and maintain contact, through the Sewer Superintendent, with the Facilities Planning Engineers and the Division of Water Pollution Control. In this way, the public recreational needs in Plymouth Harbor can be emphasized.

Whitman

The Whitman Conservation Commission is interested in abating water quality problems in Hobart Pond (page 68). Hopefully the pond can be developed into a fishing, boating and drainage improvement aid, once sources of pollution are abated and sediments are removed. The Conservation Commission and Board of Health requested the DWPC Regional Office to sample the pond and its tributaries to determine the source of high coliform bacteria counts.

DEQE RESPONSE: The results of water quality testing in the Hobart Pond area have been forwarded to the Whitman Conservation Commission and Board of Health. The highest coliform bacteria counts entering the the pond were experienced in a drain pipe from a plating plant. This problem is now being corrected by expanding the existing subsurface disposal system in this area. Other sources of pollution may include poorly operating septic systems of private residences and storm drainage from residential areas. Corrections of these problems will be necessary before dredging and recreational development can be undertaken.

HW/df

The following comments were received from the Southeastern Regional Planning and Economic Development District.

General Comments:

Several of the river basins studied in this report are now included in an implementation project intended to counteract the negative impacts of urban run-off. Such activities as street sweeping and catch basin cleaning will hopefully help to abate some non-point sources of pollution now reaching several major rivers in the region. Interested persons should contact SRPEDD directly.

Multiple use projects in Facilities Planning require a great degree of coordination. For these and other projects involving regional water quality and planning issues, a 201/208 coordinator should be responsible for insuring the compliance of facilities Plans with each of the 208 Regional Water Quality Plans.

Attleborough

The Ten Mile River, Farmer's Pond, Blackinton Pond, Mechanics Pond, Dodgeville Pond, and Hebronville Pond all show problems with heavy metals. The Bungay River is in a water supply protection area. It is not really a polluted water body.

Berkley

The Taunton River is heavily polluted and has an algae bloom most of the year.

Carver

The Weweantic River is not polluted, and should not be listed under polluted water bodies.

Dartmouth

The treatment plant at Dartmouth may not be appropriate for park use since some of the vacant area is now being used for sludge disposal.

Dighton

The Three Mile River is not deep enough for sailing at this location. Also the Taunton River is heavily polluted.

Fairhaven

The mouth of the Acushnet River and the New Bedford harbor do not freeze sufficiently for ice skating as an activity.

Fall River

The mouth of the Taunton River is usually too choppy for safe canoeing or row boating. Also Wattupa Pond is privately owned and severely polluted.

Foxborough

Foxborough is not a member of SERPEDD.

Lakeville

The Nemasket river is not deep enough for sailing at this location. It is also not a polluted water body. At this location the Poquoy Brook is very swampy and many recreational activities would not be possible in this area.

Mansfield

The Rumford River is too shallow at this location for sailing.

Middleborough

The Nemasket River and the Poquoy are too shallow at this location for sailing.

New Bedford

Clark Cove is generally too rough for safe canoeing or row boating.

North Attleboro

The treatment plant will not be appropriate for multiple use for recreation because of potential security problems.

The Ten Mile River is too shallow at this location for sailing.

Norton

The Wading River is not polluted. Wells near the river draw water in this area.

Plainville

The Ten Mile River is too shallow for sailing in this location.

Rehoboth

The Palmer River is not polluted.

Seekonk

At one time a Ten Mile River Greenbelt was proposed for open space preservation on the Massachusetts and Rhode Island Sections.

Swansea

The Lee and Cole Rivers should be listed as high potential, since these kinds of recreational activities are already occurring.

Taunton

The Three Mile River and Mill River are too narrow and shallow at this location for any boating except canoeing.

Wareham

The Weweantic River is not a polluted water body.

DEQE Response

General Comments

The general comments are so noted.

Attleborough

Severely polluted water bodies, even if not suitable for water contact recreation at the present time, were made a part of this study. The intent was to evaluate recreation potential, should water quality be improved.

The Bungay River has experienced low dissolved oxygen levels and some instances of high coliform bacteria, probably due to natural low flow and organic conditions. Since it is sometimes below class B water quality it is still listed as a polluted water body.

Berkley

(Comments under Attleborough on severely polluted water bodies apply to the Taunton River).

Carver

Although the Weweantic River has experienced some past problems with pesticide use in the area, it is now meeting its water quality standards.

Please make the following changes to the report:

Page 39 - Eliminate #19

Page 52 - Under A, replace the second paragraph with the statement above on the Weweantic River. Eliminate Section C on page 52.

Dartmouth

Make the following changes:

Page 37 - #1, move to the "low" potential project column.

Page 54 - Section A under Treatment Plant add the following statement: This could be done once the area is graded and reseeded following sludge disposal.

Section C, In the second line eliminate the words "very good".

Under #2 - Revise this sentence to read:

> The Dartmouth Parks and Recreation Department should consider a playground at the Town's wastewater treatment plant, following its use for sludge disposal. They should also consider a path system along the North Dartmouth and main interceptors.

Dighton

Page 39 - #24 delete the word "sailing".

Page 57 - Section A under Three Mile River, the Second paragraph, second line, delete the words "and sailing"

Although the Taunton River is heavily polluted, it was placed in this study to evaluate the recreation potential of the area, should clean-up be successful.

Fairhaven

Page 39 - #25-26 delete the words "ice skating".

Page 60, in the second paragraph, third line, delete the words "ice skating". Under C, fifth line, delete the words "ice skating".

Fall River

Page 39 - #27 delete the words "canoeing" and "row".

Page 62 - Last line delete the words "canoeing" and "row". Watuppa Pond as described on page 63, is severely polluted. Public access should be provided for recreation facilities if clean up measures are instituted.

Foxborough

Foxborough was included in the SERPEDD planning district during the 208, regional water quality study. We have included it in Volume 11 since these reports are a part of the 208 planning program.

Lakeville

Page 40 - #33, delete the word "sailing".

#34, delete the words "Fishing" and "picnicking"

Page 67 - The last line, delete the word "sailing".

Page 69 - Under Poquoy Brook, second paragraph, last line, delete the words "canoeing," "fishing" and "picnicking".

The discussion page 67 explains the condition of the Namasket River. The water quality has improved in the past five years, however water contact recreation standards still have not been met. For that reason its recreation potential was studied during this project.

Mansfield

Page 40 - #35, delete the word "sailing".

Page 70 - Section B, 2nd paragraph, last line, delete the word "sailing".

Middleborough

Page 41 - #36-38 delete the word "sailing".

Page 74 - Second line from the bottom, delete the word "sailing".

New Bedford

Page 41 - #40, delete the words "canoeing" and "row".

Page 79 - Second line from the top, delete the words "canoeing" and "row"

North Attleboro

Page 37 - Because of the above mentioned security problems at the treatment plant, #5 should be moved from "high" potential to "low" potential.

Page 41 - #43, delete the word "sailing".

Page 79 - Under "Treatment Plant," the last sentence in this paragraph should be deleted and the following substituted:

As a result, the site has some potential as a park or playground, but only if security problems at the treatment plant can be solved.

Page 82 - Fifth line from the top, delete the word "sailing".

Under Section C, the first sentence should be deleted and the following substituted:

The North Attleboro Wastewater Treatment Plant would be a potential site for a park or playground if security problems can be addressed. At the present time it has low potential.

Under #2, delete the entire sentence and substitute:

A park or playground could be considered at the treatment plant if security measures can be effected.

Norton

As explained on page 83, the Wading River is classified as a polluted water body due to depressed dissolved oxygen levels and occasional elevated bacterial counts.

Plainville

Page 42 - #49, delete the word "sailing".

Page 86 - Second paragraph, last line, delete the word "sailing".

Rehoboth

In Rehoboth, the Palmer River is now meeting its class B water quality standards for water contact recreation.

Page 42 - #51, delete the entire entry.

Page 90 - Under Palmer River add the following:
Since the Palmer River is not polluted, it is not really a potential multiple use project for water clean up and recreation.

Page 90 - delete, the entire paragraph under B.

Page 92 - delete #1, #2 and #3.

Seekonk

Comment on the Ten Mile River Greenbelt is so noted.

Swansea

Page 43 - #56-58, delete the word "Palmer", and transfer entire paragraph to "High Potential".

Page 98 - Under A, second paragraph, delete the word "Palmer".

Taunton

Page 43 - #59-60, delete "rowboating".

Page 101- Under Mill River, second paragraph, delete the words "and row boating".

Wareham

Page 43 - #64, eliminate the entire paragraph

Pages 104 and 105 - Under Weweantic River, eliminate the entire section and insert the following:

Although the Weweantic River has experienced some past problems with pesticide use in the area, it is now meeting its class B water quality standard.

Page 105 - Under Section C, delete "Weweantic" wherever it appears.

The following comments were made by the towns and cities concerning the Southeastern Region Recreation Report. Where required, DEQE's response to comments is included:

Carver

The Department of Public Works in Carver supported the original inclusion of the Weweantic River in this study. The "cleanup" efforts they are interested in are mainly flood control problems and channel obstruction. Apparently the River flooded several locations in 1978 and flooding continues to limit its uses for cranberry growing and hydropower.

DEQE Response

Although we agree that flooding is a severe problem, the water quality of the Weweantic is good and it should not be listed as a polluted water body. (Noted earlier in this addendum). A full copy of the recreation report does, however, include a list of funding for recreation projects which might be used in conjunction with flood control. Listed on pages 22-25, Federal Agencies which might provide some community assistance in this area include the Farmers Home Administration, the Soil Conservation Service, and the U.S. Army Corps of Engineers.

Foxborough

The Conservation Commission expressed a strong interest in improving the water quality in the Neponset Reservoir and in providing public access to the shoreline for recreation.

DEQE Response

The Neponset Reservoir has been confirmed as a high potential recreation project. Potential funding assistance is listed in Table 3, pages 21-25 in the full copy of the report.

Seekonk

The Conservation Commission reports that the closing of a dyeing and finishing plant and a sewage treatment plant have greatly improved water quality on the Ten Mile River. The town is continuing its work in improving water quality in the Runnins River.

DEQE Response

Page 92 - Under "Ten Mile River", make the following changes:

Line 2, delete the word "are" and insert were
Line 3, delete "contribute" and insert have been
Line 4, delete entire line and insert:

removed from the Ten Mile River, resulting in improved water quality. Because of ...

Line 5, insert the word still at the end of the line.

Page 93 - Line 4, delete "is" and "very" and insert remains.

RECREATION AND OPEN SPACE OPPORTUNITIES

ASSOCIATED WITH WATER CLEAN-UP

CAPE COD VOLUME 12

The following correction should be made to the above cited report.

HARWICH

Page 44 - Section C-4. Delete Inman Rd. Beach - it is not located in the Town of Harwich.

IMPORTANT

Please attach this sheet to the volume or section previously transmitted to you.

Addendum to Volume 13: Islands

No corrections or changes were requested.